SCHILLER

MEDICAL S.A.S.

# MAGSCREEN

**Technical manual**

**Version 01.02**

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THE ART OF DIAGNOSTICS

Part No. W1404621

# History of techinical Manual revisions

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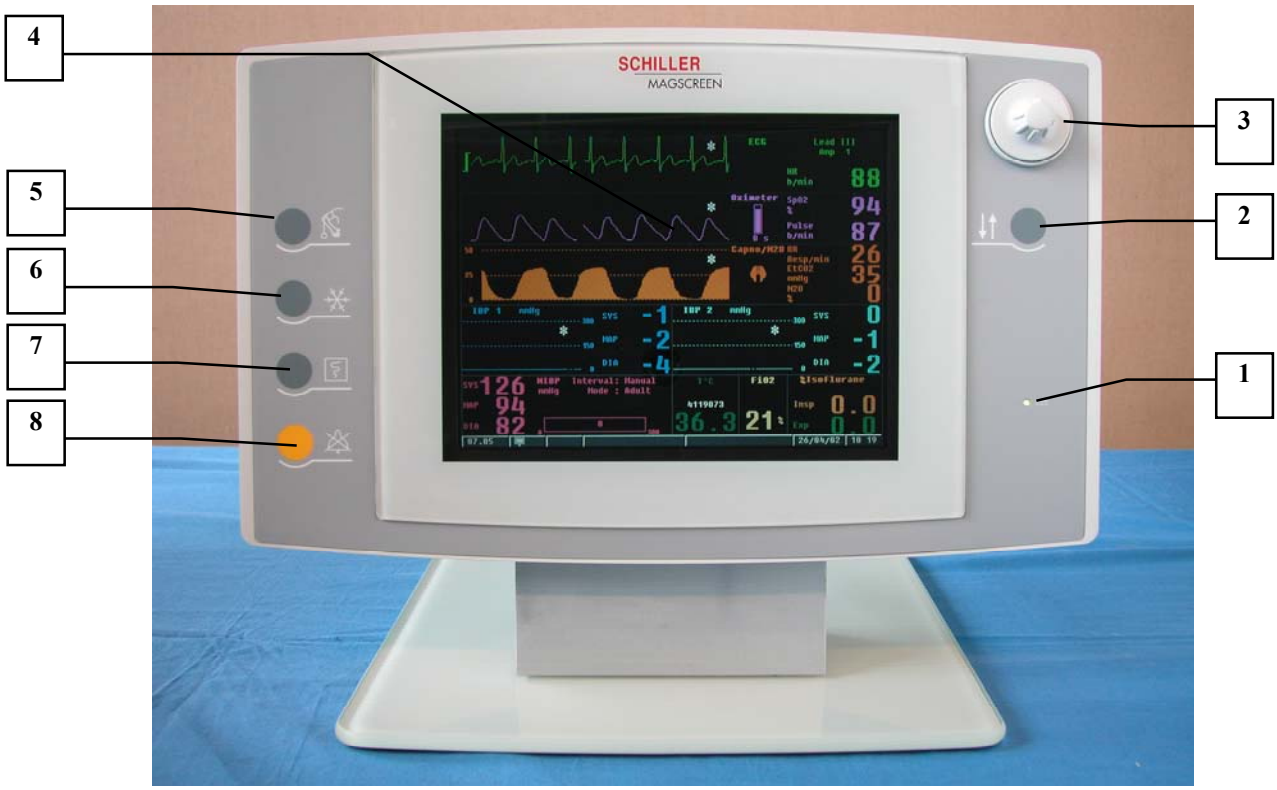
# 1. OPERATION

## 1.1. Display and controls

This chapter identify and describe all display and controls assembly of **MAGSCREEN**.

### 1.1.1. Front panel




**(1) ON/OFF CONTROL**

Main unit on/off switch.

**(2) MENU ACCESSING CONTROL**

Key for displaying and accessing the main menu or quitting a menu from any location. (when **MAGSCREEN** control MAGLIFE C PLUS.).

**(3) MENU SELECTION CONTROL**

Rotating button for transmferring control to **MAGSCREEN** or selecting menus (when **MAGSCREEN** control MAGLIFE C PLUS.).

**(4) SCREEN**

Waveform, parameter, menu and message display screen.

**(5) PRINT CONTROL**

Key for starting up or stopping printing (depending upon the version).

**(6) NIBP STARTING/STOPPING CONTROL**

Key for starting up or stopping the measurement of blood pressure by means of a cuff (when MAGLIFE C PLUS. is controlled by **MAGSCREEN**).

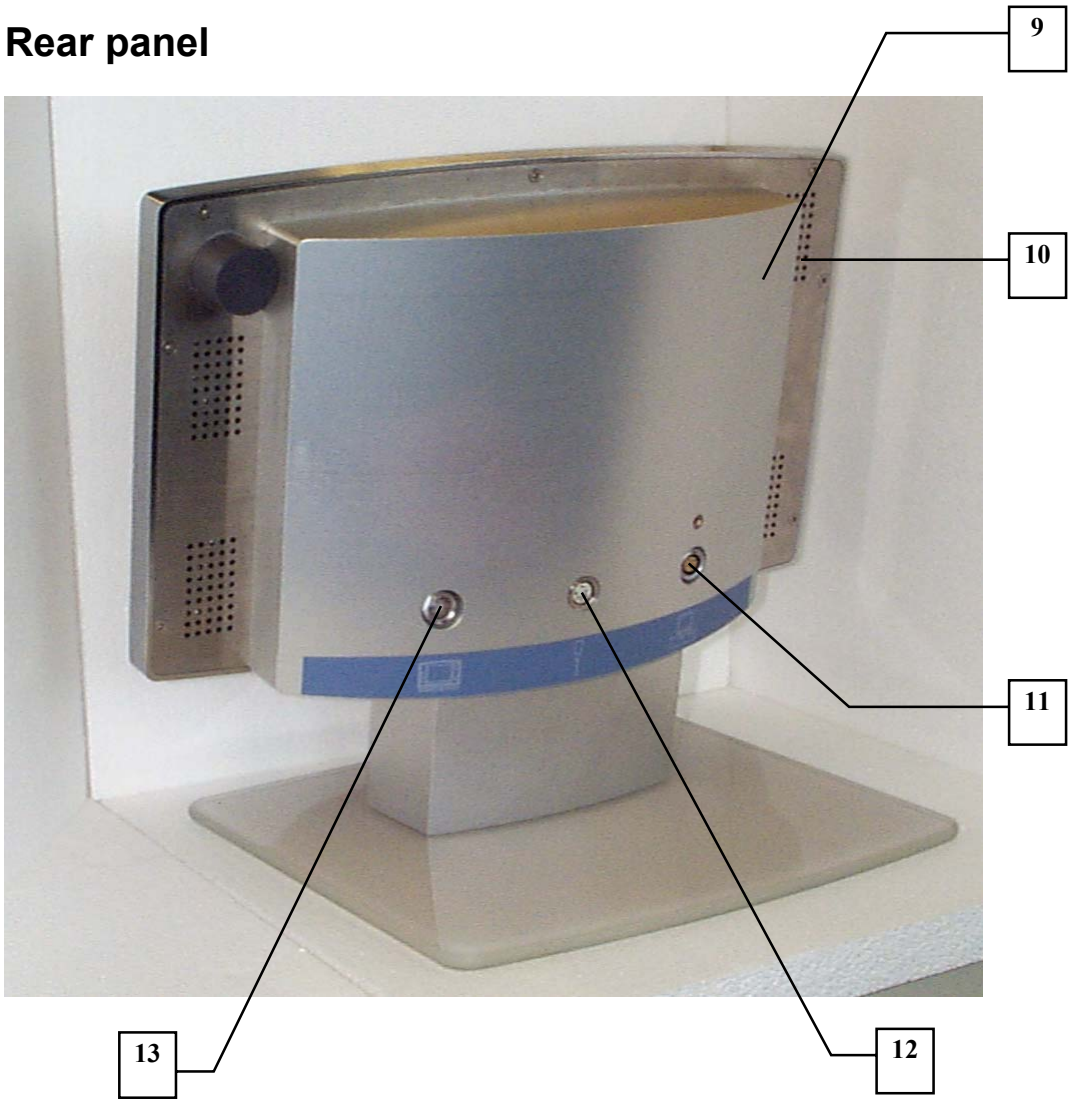
**(7) ALARMS INHIBITION CONTROL**

Key for enabling physiological and technical audio alarms or disabling them for 3 minutes (when MAGLIFE C PLUS. is controlled by **MAGSCREEN**).

**(8) FREEZE CONTROL**

Key for freezing and releasing the scrolling of all physiological curves (when MAGLIFE C PLUS. is controlled by **MAGSCREEN**).

### 1.1.2. Rear panel




**(9) IDENTIFICATION PLATE**

Device identification plate.

**(10) LOUDSPEAKER OUTPUT**

Loudspeaker output.

**(11) MAGFILE PLUG**

LEMO connector for connecting to MAGFILE.

**(12) POWER INPUT**

Power input.

**(13) MAGLIFE C PLUS. PLUG**

LEMO connector for connecting to MAGLIFE C PLUS..

## 1.2. Installation

**MAGSCREEN** is connected to MAGLIFE C PLUS. by means of a bi-directional optical fibre cable connected to **(13)** on the rear of the device.
The cable requires a passage through the Faraday cage called a "wave guide", which is normally designed on the filter plate of the MRI system or close to the HF window.
If this is not so, have a "wave guide" installed by the manufacturer of the Faraday cage in compliance with the specifications of the MRI equipment manufacturer.

Internal free access: 17 mm minimum for a straight "wave guide" and 55 mm if there is a 90° bend.
(the maximum outer diameter of the optical fibre connector is 16 mm)

Standard length of the optical fibre link: 25 m

**MAGSCREEN** has an external power supply unit which must be connected to a standard mains power supply socket.

Mains power supply:
Voltage: 115 V (± 10 %) or 230 V (± 10 %)
Frequency: 50 Hz or 60 Hz
Power: 60 VA maximum

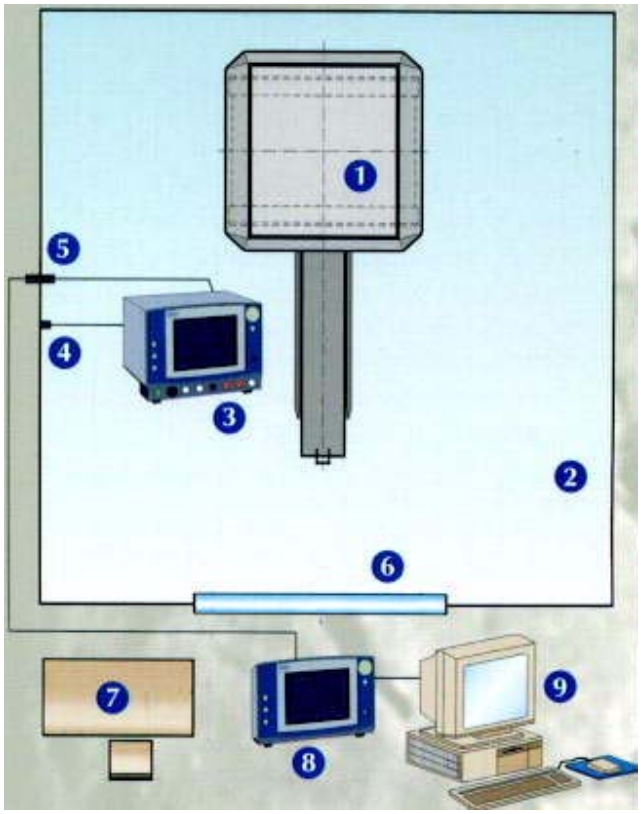
**Important:** **MAGSCREEN <u>is not compatible with magnetic resonance (it could be attracted by the stray MRI magnetic field and produce artefacts on the MR images)</u>**

consequently:

**DO NOT INTRODUCE MAGSCREEN INTO THE MAGNET ROOM!**

**Typical installation of the MAGLIFE C PLUS. / MAGSCREEN / MAGFILE system in an MRI facility**

(see drawing below).




1) MRI
2) Faraday cage
3) MAGLIFE C PLUS.
4) Mains socket
5) Wave guide for optical connection
6) HF Window
7) MRI Control Desk
8) MAGSCREEN
9) Optional PC for MAGFILE

## 1.3. Starting up and screen display

Connect the power supply unit provided with the device to **MAGSCREEN** via input **(12)** on the rear.

Make sure that MAGLIFE C PLUS. is on (indicator on the left-hand side of the ON/OFF button of MAGLIFE C PLUS. is on) and that the two units are correctly connected.

After a few seconds, indicator **(1)** will go on to show that the device is on.

**Important: MAGSCREEN can only operate if MAGLIFE C PLUS. is on. The On/Off control of MAGSCREEN is controlled by that of MAGLIFE C PLUS.**

After a few more seconds, the following initialisation message will be displayed:

After that message, **MAGSCREEN** will display a screen identical to that of MAGLIFE C PLUS. (see section 4.11. of the MAGLIFE C PLUS. User's Manual, item code W1403956). The audio information transmitted by MAGLIFE C PLUS. is also transmitted by **MAGSCREEN** via the loudspeaker **(10)** (see section 4.12. of MAGLIFE C PLUS. User's Manual, item code W1403956).
At the same time, a symbol showing that the connection between the two devices is active will be displayed in the status bar on the bottom of the screen.

**Notes:**

- on MAGLIFE C PLUS., the status bar will take on the same configuration as on **MAGSCREEN**.
- if the versions of the two devices are not compatible, the initialisation message disappears and is replaced by a message stating "Communication Problem" and the system remains under the control of MAGLIFE C PLUS.
- pressing keys **(6)** and **(7)** simultaneously brings up the **MAGSCREEN** version number in the status bar for 5 seconds.

## 1.4. Transfer of control to MAGSCREEN

**MAGSCREEN** is used for remote controlling the operation of MAGLIFE C PLUS. To transfer control, press rotating button **(3)**. The following message will be displayed on the screen:

**MAGSCREEN Version XX.XX**

**Press the Freeze key and the rotating button simultaneously to control MAGLIFE C PLUS.**

Now press Freeze key **(8)** while keeping rotating button **(3)** pressed down.
The transfer of control to **MAGSCREEN** is displayed by a change in the icons in the status bars of **MAGSCREEN** and MAGLIFE C PLUS..

The main controls are now accessible from rotating button **(3)** and key **(2)** via menus. The procedures are identical to those used with MAGLIFE C PLUS. (see sections 4.5. and 4.6. of the MAGLIFE User's Manual, item code W1403956).
Keys **(5)** to **(8)** are used as with MAGLIFE C PLUS.

**Notes:**

- MAGLIFE C PLUS. keeps control of the system at all times. Any action by the operator on the front panel of MAGLIFE C PLUS. (keys, buttons) will unconditionally interrupt any remote control established previously.
- remote control will be rejected or ignored by MAGLIFE C PLUS.:
  - in the following specific operating modes: "Multigas Test", "NIBP Test" and "Option Configuration". In these three modes, only the MAGLIFE C PLUS. controls are effective.
  - if a MAGLIFE C PLUS. control (key or rotating button) has been used during the previous 15 seconds.

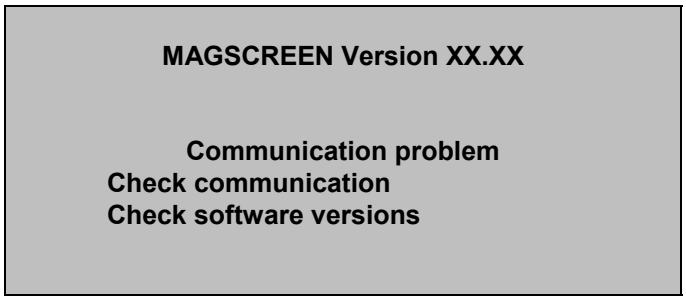
## 1.5. Transfer of control to MAGLIFE C PLUS.

Control is transferred back to MAGLIFE C PLUS. in the following four cases:

- 5 minutes after the last MAGSCREEN command ,
- after a command from MAGLIFE C PLUS.,
- each time MAGLIFE C PLUS. is turned on,
- each time connection with MAGLIFE C PLUS. is lost or faulty.

## 1.6. Connection fault

If a communication problem occurs (incorrect cable connection, faulty cable etc.), the following message is displayed:




The break in communication is also shown by a change in the icons in the status bar of MAGLIFE C PLUS.

Check the connections between MAGLIFE C PLUS., **MAGSCREEN** and MAGFILE. As soon as the connection problem is solved, the curve and data screen display is resumed.

☞ **Note**: If, however, **MAGSCREEN** is in control before the connection fault occurs, the transfer procedure must be repeated (see § 4.3. page 12).

This message is also displayed if the versions of the two devices are not compatible.

## 1.7. MAGLIFE C PLUS. / MAGSCREEN / MAGFILE status indication symbols

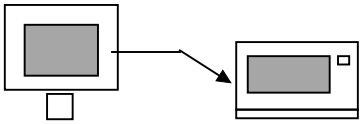
- **MAGLIFE C PLUS. / MAGSCREEN**

The connection status is symbolised by an icon displayed in the status bar.

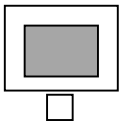
| Version | Magscreen Icon | | Battery message | Field message | Date | Time |
|---|---|---|---|---|---|---|

The four possible conditions and associated icons are as follows:

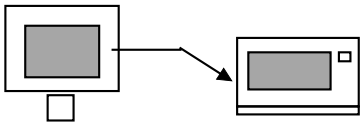
. Connection detected - Control by **MAGSCREEN**.



. Connection detected - Control by MAGLIFE C PLUS.



. Break in communication



The icon flashes for 30 seconds and then disappears completely if the problem persists.

. Connection never detected since the start

No icon displayed.

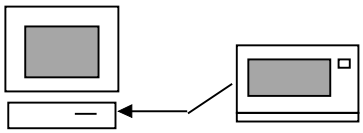
- **MAGFILE / MAGSCREEN**

The connection status is symbolised by an icon displayed in the status bar.

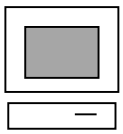
| Version | | MAGFILE ICON | Battery Message | Field Message | Date | Time |
|---|---|---|---|---|---|---|

The four possible conditions and associated icons are:

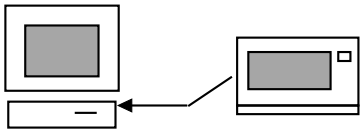
Connection detected - MAGFILE in the storage phase.



. Connection detected - MAGFILE not in the storage phase.



. Break in communication



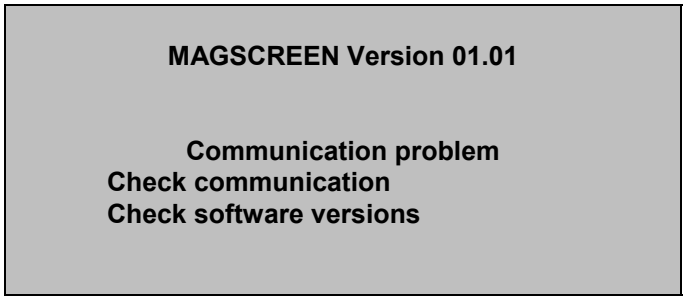
The icon flashes for 30 seconds and disappears completely if the problem persists.

. Connection never detected since the start

No icon displayed.

## 1.8. Turning MAGSCREEN off

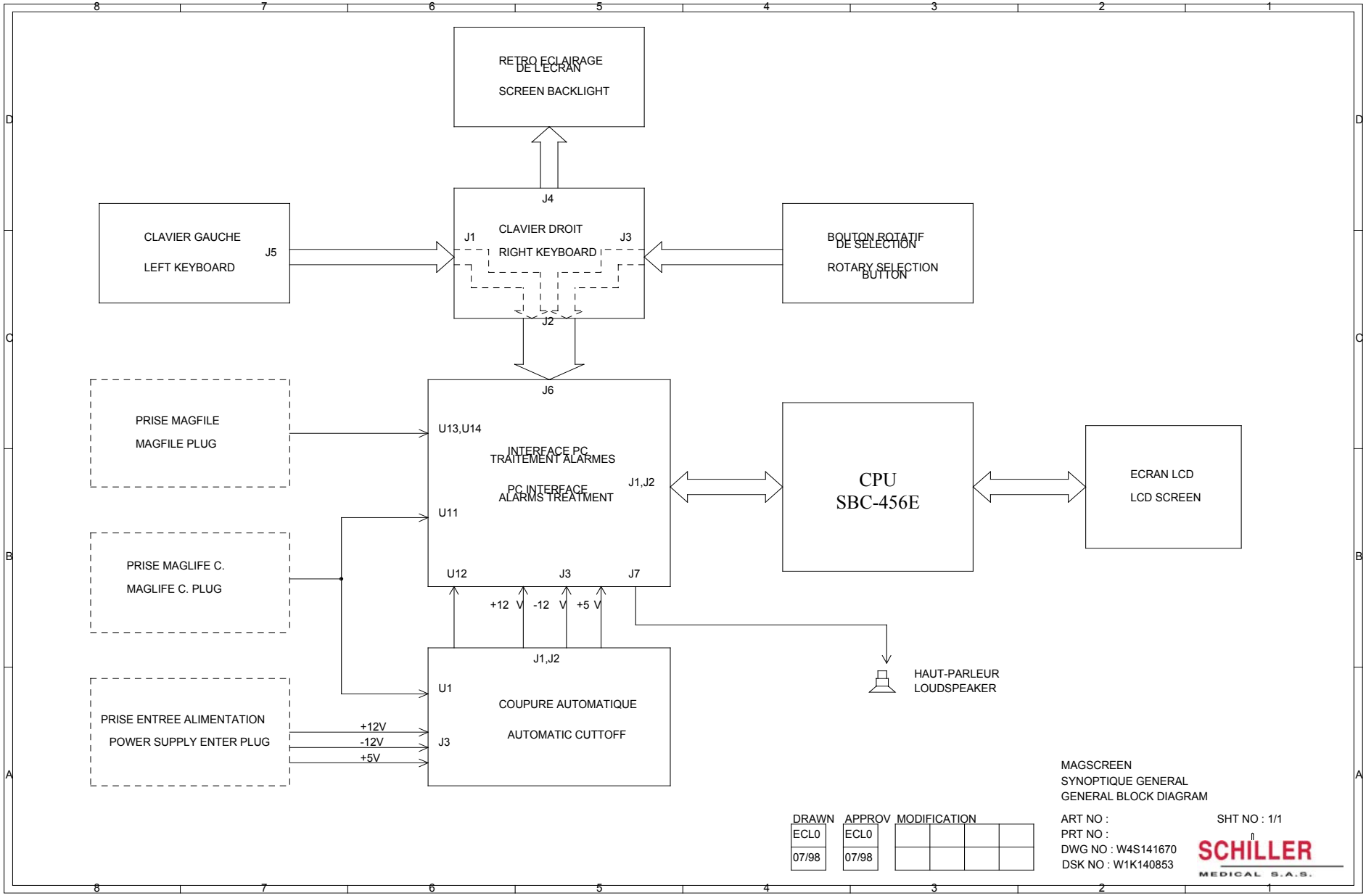
To turn **MAGSCREEN** off, turn MAGLIFE C PLUS. off. The following message will be displayed:




Turning off is also shown by a change in the icons in the status bar of MAGLIFE C PLUS..

After about 2 minutes, the screen and indicator **(1)** go off.

# 2. EXPLANATION OF OPERATION



# 2. EXPLANATION OF OPERATION

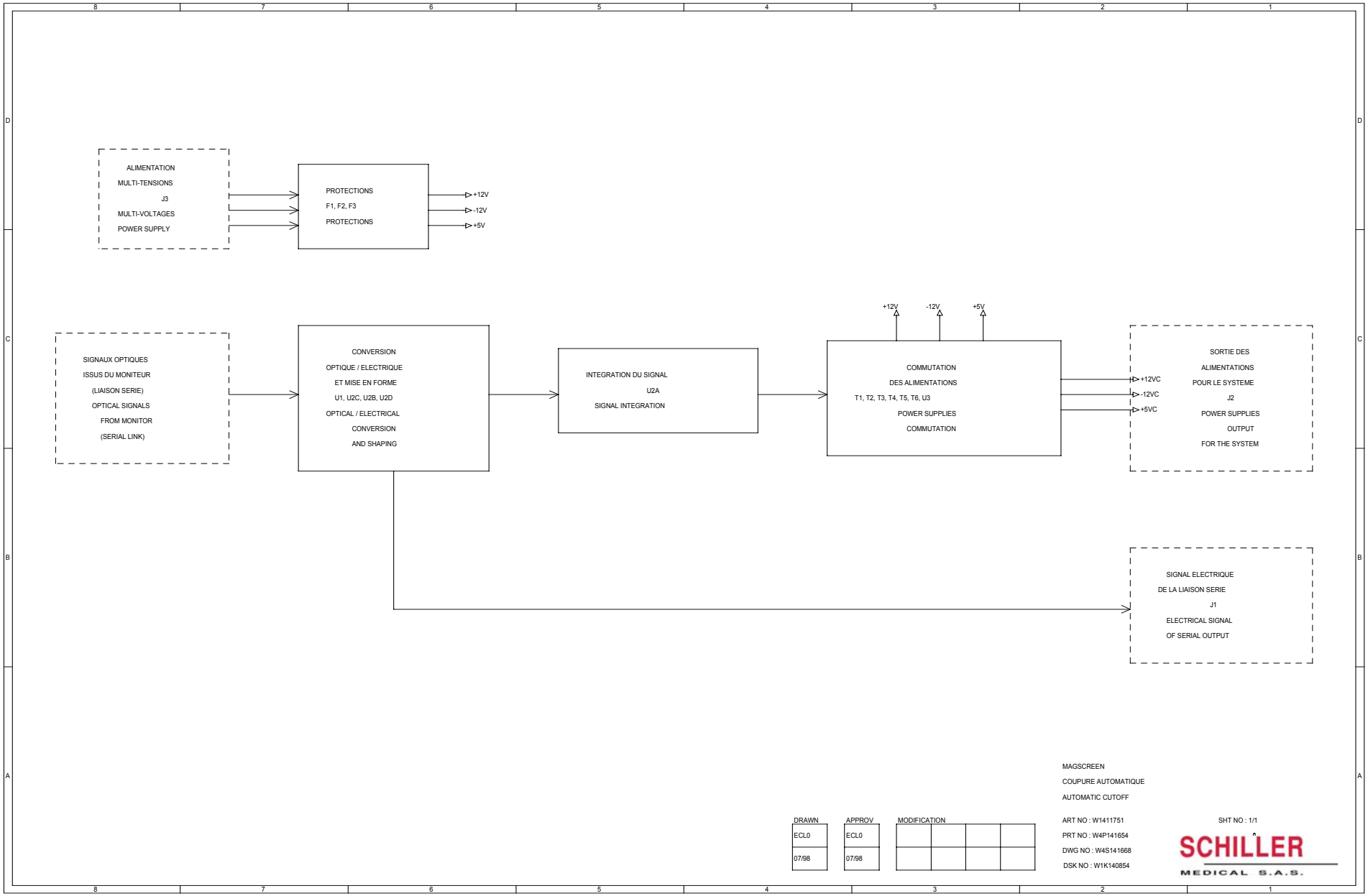
## 2.1. Overal operation

**Remark** : indications in brackets comprising a letter and a number correspond to the Cartesian coordinates on the corresponding electronic schematic.

**MAGSCREEN** is a repeater screen for use with the surveillance monitor MAGLIFE C PLUS. MAGLIFE C PLUS is placed in the MRI examination room, whilst **MAGSCREEN** is used to monitor the patient from **outside** the Faraday cage and remote control the monitor.

An optical fibre link between the MAGLIFE C PLUS. monitor and **MAGSCREEN** ensures safe and interference-free data transmission.

Power is supplied from a power supply external box who is link at main.


ALIMENTATION
MULTI-TENSIONS
J3
MULTI-VOLTAGES
POWER SUPPLY
PROTECTIONS
F1, F2, F3
PROTECTIONS
+12V
-12V
+5V
SIGNAUX OPTIQUES
ISSUS DU MONITEUR
(LIAISON SERIE)
OPTICAL SIGNALS
FROM MONITOR
(SERIAL LINK)
CONVERSION
OPTIQUE / ELECTRIQUE
ET MISE EN FORME
U1, U2C, U2B, U2D
OPTICAL / ELECTRICAL
CONVERSION
AND SHAPING
INTEGRATION DU SIGNAL
U2A
SIGNAL INTEGRATION
+12V
-12V
+5V
COMMUTATION
DES ALIMENTATIONS
T1, T2, T3, T4, T5, T6, U3
POWER SUPPLIES
COMMUTATION
+12VC
-12VC
+5VC
SORTIE DES
ALIMENTATIONS
POUR LE SYSTEME
J2
POWER SUPPLIES
OUTPUT
FOR THE SYSTEM
SIGNAL ELECTRIQUE
DE LA LIAISON SERIE
J1
ELECTRICAL SIGNAL
OF SERIAL OUTPUT
DRAWN
APPROV
MODIFICATION
ECL0
07/98
ECL0
07/98
MAGSCREEN
COUPURE AUTOMATIQUE
AUTOMATIC CUTOFF
ART NO : W1411751
PRT NO : W4P141654
DWG NO : W4S141668
DSK NO : W1K140854
SHT NO : 1/1
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## 2.2. Automatic cutoff

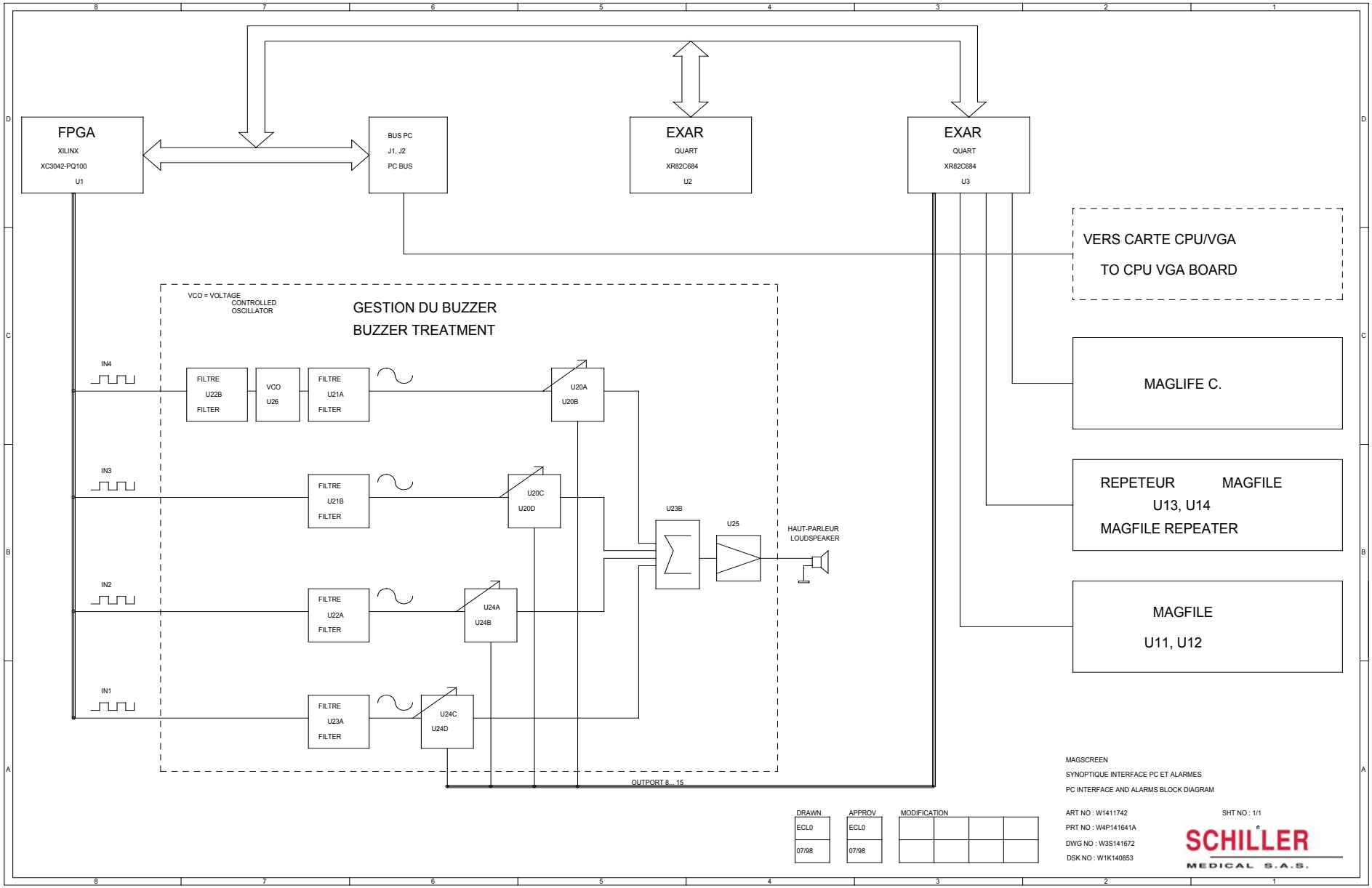
The MAGSCREEN is supplied by an external box through the control of MAGLIFE C PLUS. The "automatic cutoff" board realize the supplies communication system according to the signals given on the optical cable from the MAGLIFE C PLUS.

The main voltages +12V, -12V and +5V arrive from the connector J3 (D8). They are protect by fuses F1, F2 and F3 (D6). The capacitors C6, C7 and C8 (C7) are present to delete the electromagnetics radiations.

The signal coming from the MAGLIFE C PLUS. (serial link) and transported by an optical fiber is send to U1 (B8). This circuit convert the optical signal into an electrical signal. The signal obtained in this way is shaped by U2C, U2B and U2D (B6) circuits to be integrated and sent to the PC interface (via J1 (B1)). The integrator is built around U2A (C4) ; C4 and R2 (C5) determines the time base of the supplies cutting delaies (about 30 s).

The supply communication system is built around transistors T1,T2, T3, T4, T5 and T6. T1 (C3) amplify the U2A output to control the +5V and +12V voltage switch. T2, T4 and T6 (C2) commutate the +5V voltage ; T3 (C3) commutate the +12V. U3 (B3) and T5 (B2) commutate the -12V voltage.

**Remark** : U3 is supplied by the +5V commutated voltage. Consequently, the -12V voltage can only be present when the +5V voltage is commutated


FPGA
XILINX
XC3042-PQ100
U1
BUS PC
J1, J2
PC BUS
EXAR
QUART
XR82C684
U2
EXAR
QUART
XR82C684
U3
VERS CARTE CPU/VGA
TO CPU VGA BOARD
VCO = VOLTAGE CONTROLLED OSCILLATOR
GESTION DU BUZZER
BUZZER TREATMENT
IN4
FILTRE U22B FILTER
VCO U26
FILTRE U21A FILTER
U20A U20B
IN3
FILTRE U21B FILTER
U20C U20D
U23B
U25
HAUT-PARLEUR LOUDSPEAKER
IN2
FILTRE U22A FILTER
U24A U24B
IN1
FILTRE U23A FILTER
U24C U24D
OUTPORT 8... 15
MAGLIFE C.
REPETEUR MAGFILE
U13, U14
MAGFILE REPEATER
MAGFILE
U11, U12
MAGSCREEN
SYNOPTIQUE INTERFACE PC ET ALARMES
PC INTERFACE AND ALARMS BLOCK DIAGRAM
DRAWN
ECL0
07/98
APPROV
ECL0
07/98
MODIFICATION
ART NO : W1411742
PRT NO : W4P141641A
DWG NO : W3S141672
DSK NO : W1K140853
SHT NO : 1/1
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## 2.3. PC interface

This board mainly acts as a communication interface between the PC SBC-456/E board and the other devices like the **MAGLIFE C PLUS.** or the **Magfile** via series and optical links.
It controls the starting up and turning off of the main power supply, and also controls the power supply to the various modules depending upon their use, via the power supply board.

It also allow the maintenance of the MAGSCREEN's power supply even if there isn't any data who passed in the optic fibers. This is taken by a function from the automatic cutoff board.

Two EXAR XR82C684 circuits act as the series connection with the modules:
- U2 (C5) is used to read datas from the system configuration connector,
- U3 (C4is used to communicate with external devices such as MAGFILE, to download datas and to acquire the informations come from the MAGLIFE C PLUS.

One XILINX XC3042PQ100 circuit is used to reduce the surface of the printed circuit:
- U1 (C6) takes charge of decoding addresses, controlling the keypad and generating sounds.

### 2.3.1. Link with the keypad

The keypad includes 5 keys and a rotary button.

Signals BR0, BR1, BR2, BR4 and BR5 from the rotating button all go through a trigger gate and XILINX U1 (C6) which includes anti-rebound circuits.

The 5 signals from the keys are also reshaped by U1.

All these bits are sent to the data bus by U1, with the exception of the "Graph" key signal, which is sent through one of the U2 EXAR circuits.

### 2.3.2. The sound function

A small speaker is connected onto this board. It supplies 4 sounds:
- 3 sounds with different frequencies and amplitudes (4 levels) and of fixed duration,
- a continuous sound with a variable frequency and amplitude (4 levels).

The first three sounds are supplied by logical outputs IN1, IN2, IN3 of U1 (C6). IN4 is a variable cyclic ratio signal. Associated with U22 (A6), a variable voltage is obtained to control the VCO of U26 (A6) and obtain a variable frequency. Signals OP8 - OP15 from U3 (C4) are used to control the analogue switches and the amplitude of the sound. Signal S-ON (B8) validates the emission of a sound.

## 2.4. Left keypad

The « left keypad » printed circuit (W4P141661) is used to access the controls :

- PB3 (B4) is used to disable the sound alarms for 3 minutes,
- PB4 (B4) is used to print a graph,
- PB5 (A5) is used to freeze a trace on the screen,
- PB6 (B5) is used to start and stop NIBP measurements.

## 2.5. Right keyboard

The « right keypad » printed circuit (W4P141637) is used to display the status of the unit and access the controls.

Displaying is done via the following LED :

- LD2 (C6) indicates that the mains power is present.

The controls are operated by the rotating button on the front of the unit connected to J3 (D7) and by the PB2 (C4) key which is used to access the main menu :

The signals from tabs 7 and 9 of J2 (D2) are used by transistor T1 (D3) to control the back-lighting of the screen via J4 (D7).

## 2.6. CPU SBC-456/E

The CPU SCB-456/E board is an OEM board from AAEON.
For more details about this board, refer to the user's manual « SBC-456/E » AAEON.

## 2.7. Technical characteristics

### ENVIRONMENT SPECIFICATIONS

| | | |
|---|---|---|
| Dimensions | : | · width : 430m<br>· height : 345 mm<br>· depth : 300 mm |
| Weight | : | approx. 12 kg |
| Protection degree | : | IP20 |
| Extreme operating temperature | : | + 10 à + 30 °C (used in air-conitionned room adjusted to + 20 °C ± 5 °C) |
| Extreme storage temperature | : | - 10 à + 50 °C |

### POWER SUPPLY

#### Power supply (converter)

| | | |
|---|---|---|
| Unit class | : | I |
| Input nominal voltage | : | 100 V / 240 V alternative - 50 / 60 Hz |
| Power absorbed from mains | : | approx. 30 VA |
| Maximum current protection | : | · fuses 2 AT / 250 V (230 V) |

### LCD SCREEN

| | | |
|---|---|---|
| Screen | : | · type: VGA, TFT technology<br>· dimensions: 10.4"<br>· 256 colours<br>· 640 X 480 points |
| Scrolling speed | : | 25 mm/s |
| Scrolling direction | : | left to right |
| Trace freeze | : | via key |
| Back lighting | : | cold cathode fluorescent lamp |

## ALARMES

| | | |
|---|---|---|
| Physiological and technicals alarms | : | · visual and sound<br>· can be disabled for 2 minutes or continuously, with a reminder every 2 minutes |
| Preference | : | · physiological alarm when the alarms appear on different modules<br>· technical alarm if the alarms appear on the same module |
| Audible alarm frequency | : | 870 Hz |
| Time to alarm | : | 9 s |

# 3. REPAIR SPECIFICATIONS

## 3.1. Disassembly instructions

This section provides the procedure for dismantling the unit to access the various parts.

Check the following points before you dismantle the unit:

- **MAGLIFE C PLUS.** must be off, and the mains cable must be disconnected,
- all the cables on the front must be disconnected,
- dismantle the unit on an antistatic mat.

**Note**: the figures in brackets refer to the exploded view of the unit.

### 3.1.1. Disassembly the front plate (x)

Turn the device over, so that the back of the device is before you. Unscrew the 6 screws (x) situated on the sides of the device.

Turn the device over again. Remove the last screw on the top of the back of the device, but you must carefully support the front plate so that it can't fall brutally.

Disconnect all cables linking the components of the front panel and the rear panel

Place the front panel on a carpet. Now, you can remove the following parts :

- the « left keypad » board,
- the « right keypad » board,
- the speaker,
- the « PC interface » board,
- the CPU/VGA 486/586LCD board,
- the internal screen coveri.

#### a) « left keypad » (x) board

Unscrew the 8 screws (x) on the board and disconnect the connector from the board.

#### b) « right keypad » (x) board

Unscrew the 4 screws on the board and disconnect the connectors from the board.

#### c) Speaker (x)

Remove the connector on the « PC nterface » board and unstick the speaker.

### d) « PC interface » board (x)

Remove the connectors who are still link at the board.

Unscrew the 4 distance sleeve (x) and remove the board (the board is also hold back by the connectors J1 and J2)

### e) « CPU/VGA - 486/586LCD » (x) board

Remove the connectors who are still link at the board.

Unscrew the 4 distance sleeve (x) and remove the board.

### f) Internal screen cover (x)

Remove the 6 screws on the side and remove the covering cap and the screen.

## 3.1.2. Disassembly of rear assembly components (x)

### a) LEMO plug(x)

Unscrew the counternut from the plug. The plug can be removed.

### b) « automatic cutoff » (x) board and associated plug (x)

Unsolder the 3 CMS capacitors placed in the dotted ring (representation of the plug) on the board. Unsolder the 6 solder points in the ring and stand up the tab at the top of the ring. Remove the board.

Unscrew the counternut from the plug. The plug can be removed.

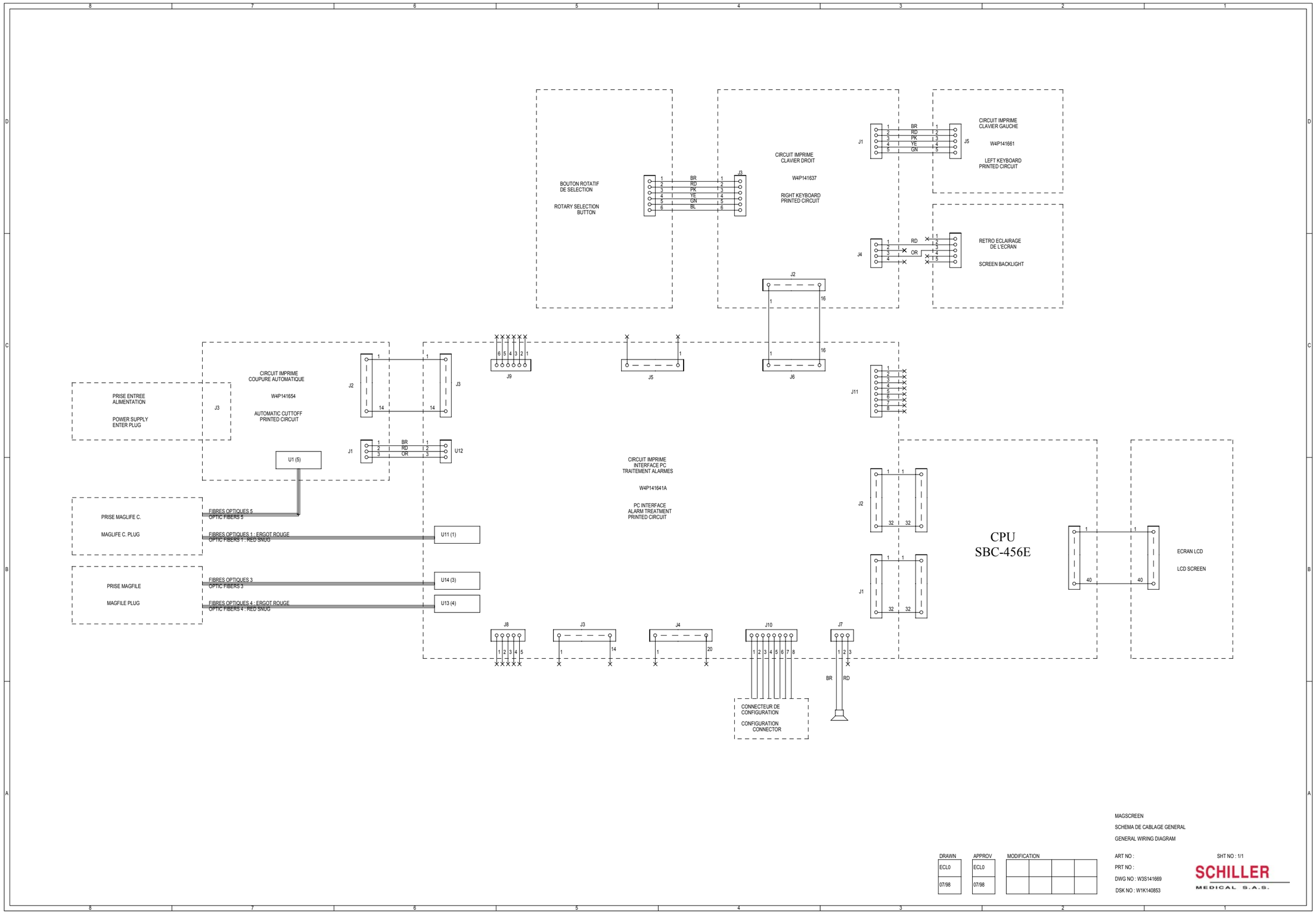
## 3.3. Replacing the cables

If any external cable fails to operate correctly, replace the entire cable. Use SCHILLER cables. Their item codes are as given below

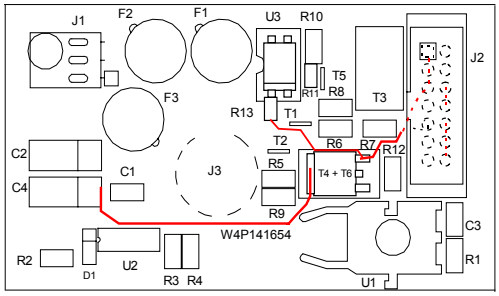
- 35222 : main cable 2.5 m
- W1404615 : linking cable between MAGLIFE C PLUS and MAGSCREEN 25 m

# 4. DIAGRAMS


| | | |
|---|---|---|
| | **Device wiring diagram** | |
| | ◊ diagram 1/1 | 4-2 |
| **W1411751** | **« automatic cutoff » printed circuit - W4P141654** | |
| | ◊ layout | 4-3 |
| | ◊ circuit diagram 1/1 | 4-4 |
| **W1411804** | **« automatic cutoff » printed circuit - W4P141654A** | |
| | ◊ layout | 4-5 |
| | ◊ circuit diagram 1/1 | 4-6 |
| **W1411742** | **« PC interface » printed circuit - W4P141641A** | |
| | ◊ layout | 4-7 |
| | ◊ circuit diagram 1/2 | 4-8 |
| | ◊ circuit diagram 2/2 | 4-9 |
| **W7412096** | **« PC interface » printed circuit - W4P141730** | |
| | ◊ layout | 4-10 |
| | ◊ circuit diagram 1/4 | 4-11 |
| | ◊ circuit diagram 2/4 | 4-12 |
| | ◊ circuit diagram 3/4 | 4-13 |
| | ◊ circuit diagram 4/4 | 4-14 |
| | ◊ PC interface connection diagram | 4-15 |
| **W1411756** | **« left keyboard » printed circuit - W4P141661** | |
| | ◊ layout | 4-16 |
| | ◊ circuit diagram 1/1 | 4-17 |
| **W1411760** | **« right keyboard » printed circuit - W4P141637** | |
| | ◊ layout | 4-18 |
| | ◊ circuit diagram 1/1 | 4-19 |
| **W1412146** | **PC mother board AAEON** | |
| | ◊ documentation | 4-20 |
| | ◊ layout | 4-25 |
| **3-55-0015** | **PC mother board AAEON version B** | |
| | ◊ documentation | 4-26 |
| | ◊ layout | 4-31 |


BOUTON ROTATIF DE SELECTION
ROTARY SELECTION BUTTON
CIRCUIT IMPRIME CLAVIER DROIT
W4P141637
RIGHT KEYBOARD PRINTED CIRCUIT
CIRCUIT IMPRIME CLAVIER GAUCHE
W4P141661
LEFT KEYBOARD PRINTED CIRCUIT
RETRO ECLAIRAGE DE L'ECRAN
SCREEN BACKLIGHT
PRISE ENTREE ALIMENTATION
POWER SUPPLY ENTER PLUG
CIRCUIT IMPRIME COUPURE AUTOMATIQUE
W4P141654
AUTOMATIC CUTTOFF PRINTED CIRCUIT
U1 (5)
CIRCUIT IMPRIME INTERFACE PC TRAITEMENT ALARMES
W4P141641A
PC INTERFACE ALARM TREATMENT PRINTED CIRCUIT
CPU SBC-456E
ECRAN LCD
LCD SCREEN
PRISE MAGLIFE C.
MAGLIFE C. PLUG
PRISE MAGFILE
MAGFILE PLUG
FIBRES OPTIQUES 5 OPTIC FIBERS 5
FIBRES OPTIQUES 1 : ERGOT ROUGE OPTIC FIBERS 1 : RED SNUG
FIBRES OPTIQUES 3 OPTIC FIBERS 3
FIBRES OPTIQUES 4 : ERGOT ROUGE OPTIC FIBERS 4 : RED SNUG
U11 (1)
U14 (3)
U13 (4)
U12
CONNECTEUR DE CONFIGURATION
CONFIGURATION CONNECTOR
MAGSCREEN
SCHEMA DE CABLAGE GENERAL
GENERAL WIRING DIAGRAM
DRAWN ECL0 07/98
APPROV ECL0 07/98
MODIFICATION
ART NO :
PRT NO :
DWG NO : W3S141669
DSK NO : W1K140853
SHT NO : 1/1
SCHILLER MEDICAL S.A.S.

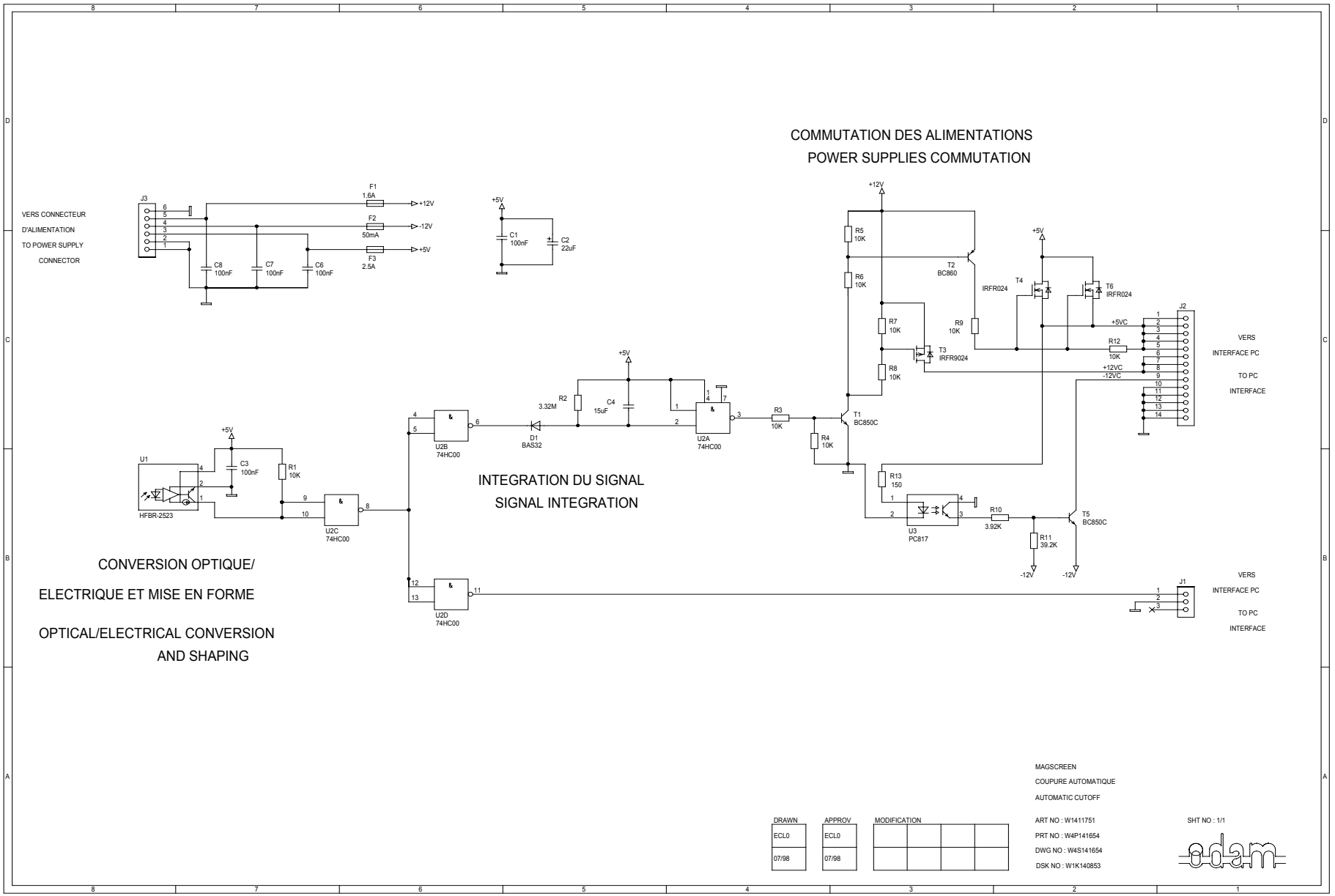
# 4. DIAGRAMS

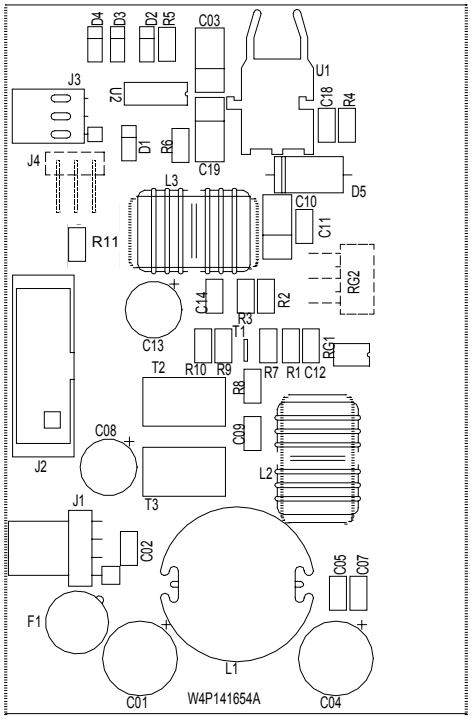



MAGSCREEN
COUPURE AUTOMATIQUE
AUTOMATIC CUTTOFF

| DRAWN | APPROV | MODIFICATION |
|---|---|---|
| ECL0 | ECL0 | |
| 07/98 | 07/98 | |

ART NO : W1411751 SHT : 1/1
PRT NO : W4P141654
DWG NO : W4L141654
DSK NO : W1K140853


COMMUTATION DES ALIMENTATIONS
POWER SUPPLIES COMMUTATION
VERS CONNECTEUR
D'ALIMENTATION
TO POWER SUPPLY
CONNECTOR
J3
F1
1.6A
+12V
F2
50mA
-12V
F3
2.5A
+5V
C8
100nF
C7
100nF
C6
100nF
C1
100nF
C2
22uF
+12V
R5
10K
R6
10K
R7
10K
R8
10K
R9
10K
T2
BC860
IRFR024
T4
T6
IRFR024
T3
IRFR9024
+5VC
R12
10K
+12VC
-12VC
J2
VERS
INTERFACE PC
TO PC
INTERFACE
R2
3.32M
C4
15uF
D1
BAS32
U2B
74HC00
U2A
74HC00
R3
10K
R4
10K
T1
BC850C
U1
HFBR-2523
C3
100nF
R1
10K
U2C
74HC00
INTEGRATION DU SIGNAL
SIGNAL INTEGRATION
R13
150
U3
PC817
R10
3.92K
R11
39.2K
T5
BC850C
CONVERSION OPTIQUE/
ELECTRIQUE ET MISE EN FORME
OPTICAL/ELECTRICAL CONVERSION
AND SHAPING
U2D
74HC00
J1
VERS
INTERFACE PC
TO PC
INTERFACE
MAGSCREEN
COUPURE AUTOMATIQUE
AUTOMATIC CUTOFF
DRAWN
ECL0
07/98
APPROV
ECL0
07/98
MODIFICATION
ART NO : W1411751
PRT NO : W4P141654
DWG NO : W4S141654
DSK NO : W1K140853
SHT NO : 1/1
adam

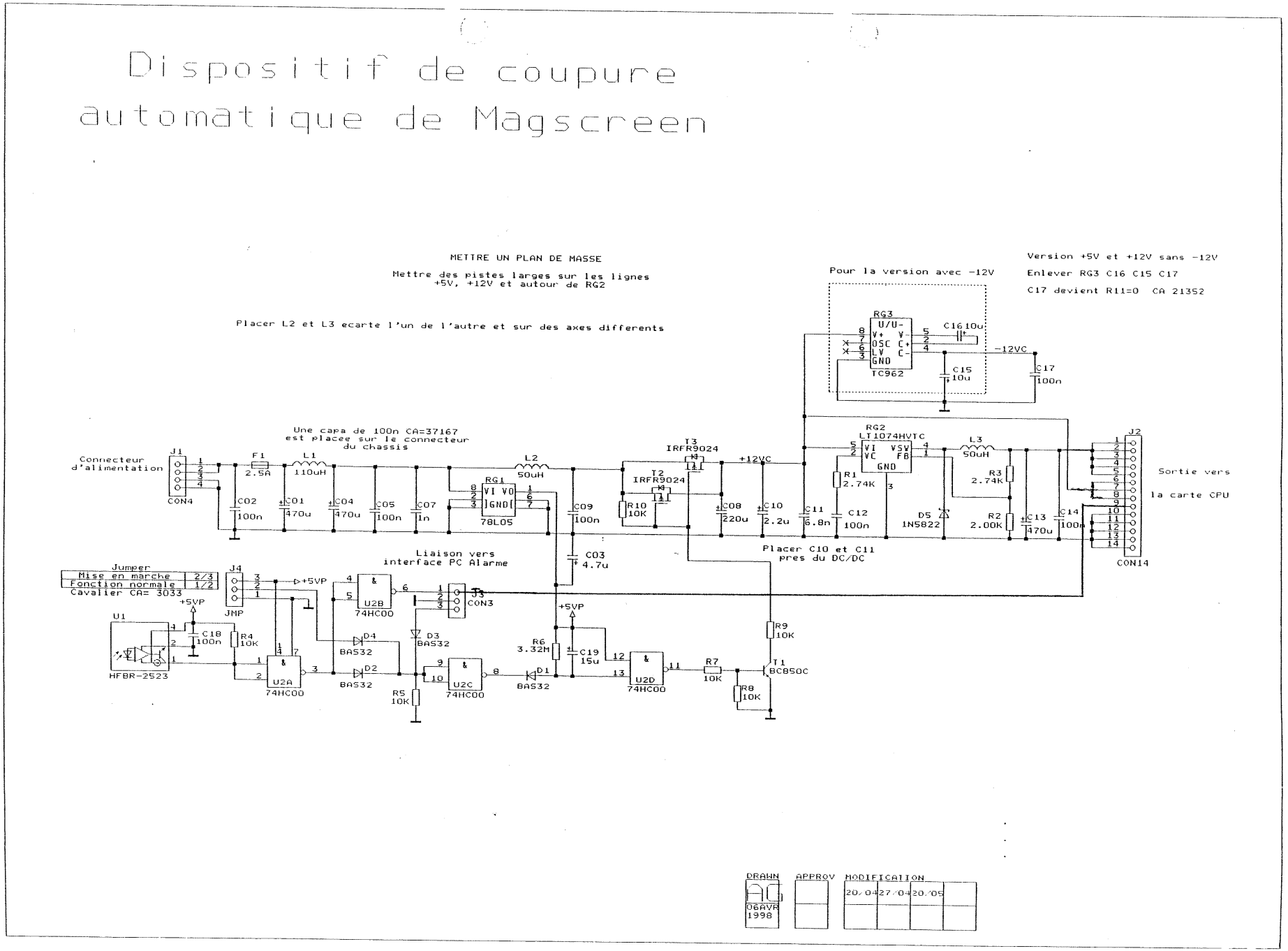


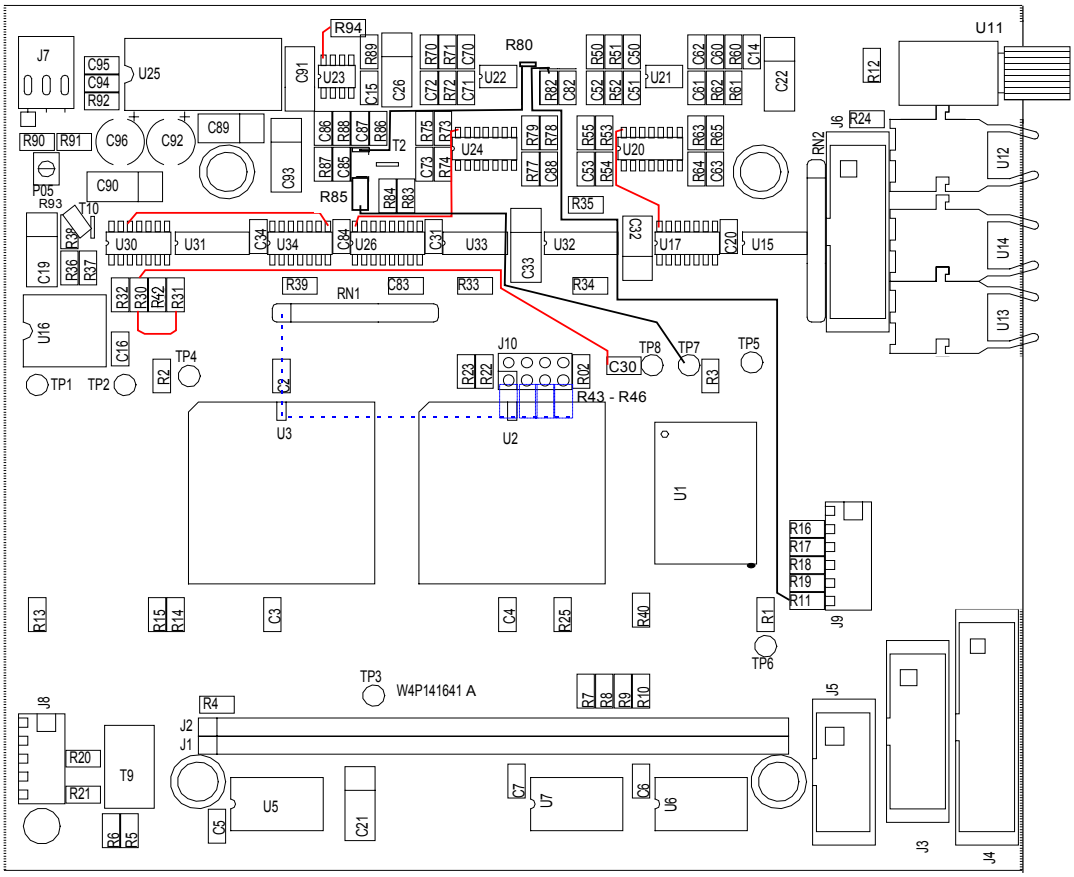

MAGSCREEN
Coupure automatique
Automatic cutoff

ART : W1411804
PRT : W4P141654A
DGW : W4L141654A
SHT : 1/1

| DRAWN | APPROV | MODIFICATION |
|---|---|---|
| CK<br>ECL0<br>11 / 98 | GM<br>ECL0<br>11 / 98 | |

SCHILLER MEDICAL S.A.S.


Dispositif de coupure automatique de Magscreen
METTRE UN PLAN DE MASSE
Mettre des pistes larges sur les lignes +5V, +12V et autour de RG2
Placer L2 et L3 ecarte l'un de l'autre et sur des axes differents
Pour la version avec -12V
Version +5V et +12V sans -12V
Enlever RG3 C16 C15 C17
C17 devient R11=0 CA 21352
Une capa de 100n CA=37167 est placee sur le connecteur du chassis
Connecteur d'alimentation
CON4
F1
2.5A
L1
110uH
L2
50uH
RG1
78L05
I3
IRFR9024
I2
IRFR9024
+12VC
RG2
LT1074HVTC
L3
50uH
RG3
TC962
-12VC
C16 10u
C15 10u
C17 100n
C01 470u
C02 100n
C03 4.7u
C04 470u
C05 100n
C07 1n
C08 220u
C09 100n
C10 2.2u
C11 6.8n
C12 100n
C13 470u
C14 100n
R1 2.74K
R2 2.00K
R3 2.74K
R10 10K
D5 1N5822
J2
CON14
Sortie vers la carte CPU
Placer C10 et C11 pres du DC/DC
Liaison vers interface PC Alarme
Jumper
Mise en marche 2/3
Fonction normale 1/2
Cavalier CA= 3033
J4
JMP
J3
CON3
+5VP
U1
HFBR-2523
C18 100n
R4 10K
U2A 74HC00
U2B 74HC00
U2C 74HC00
U2D 74HC00
D1 BAS32
D2 BAS32
D3 BAS32
D4 BAS32
R5 10K
R6 3.32M
C19 15u
R7 10K
R8 10K
R9 10K
T1 BC850C
DRAWN
APPROV
MODIFICATION
20/04
27/04
20/05
06AVR 1998

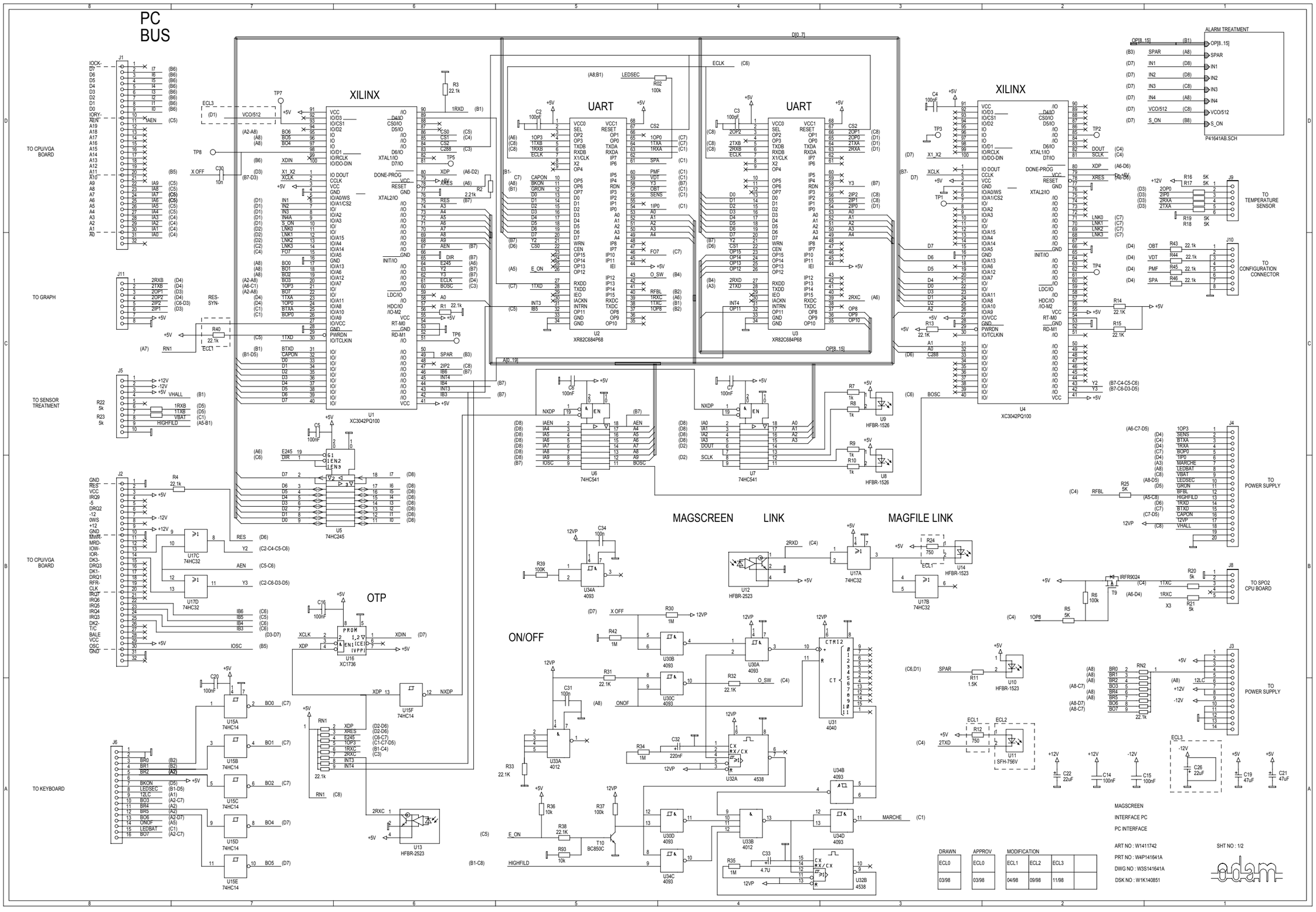



MAGSCREEN
INTERFACE PC/ALARMES
PC INTERFACE/ALARMS

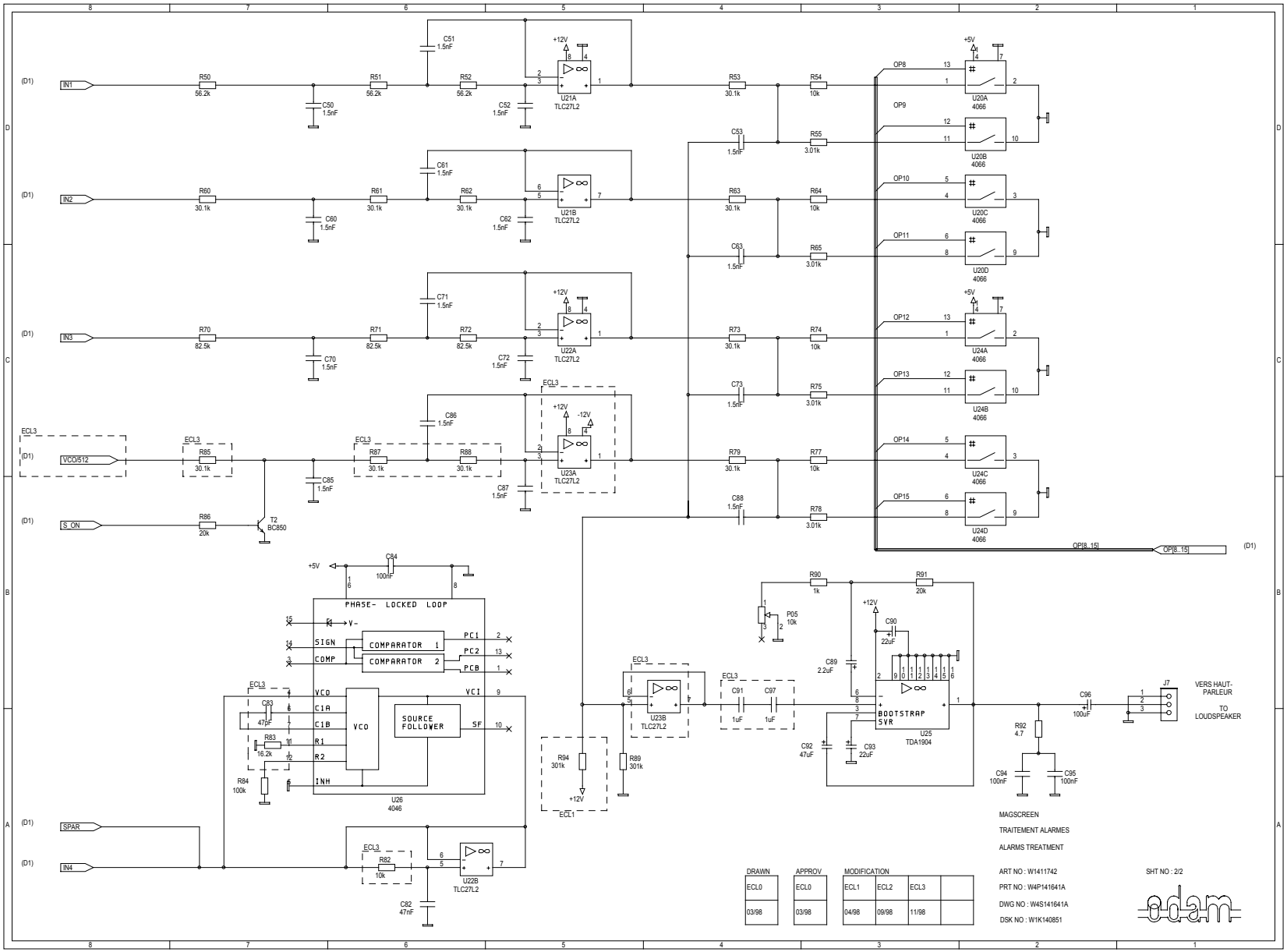
| DRAWN | APPROV | MODIFICATION | | | |
|---|---|---|---|---|---|
| ECL0 | ECL0 | ECL1 | ECL2 | ECL3 | |
| 02/98 | 02/98 | 04/98 | 09/98 | 11/98 | |

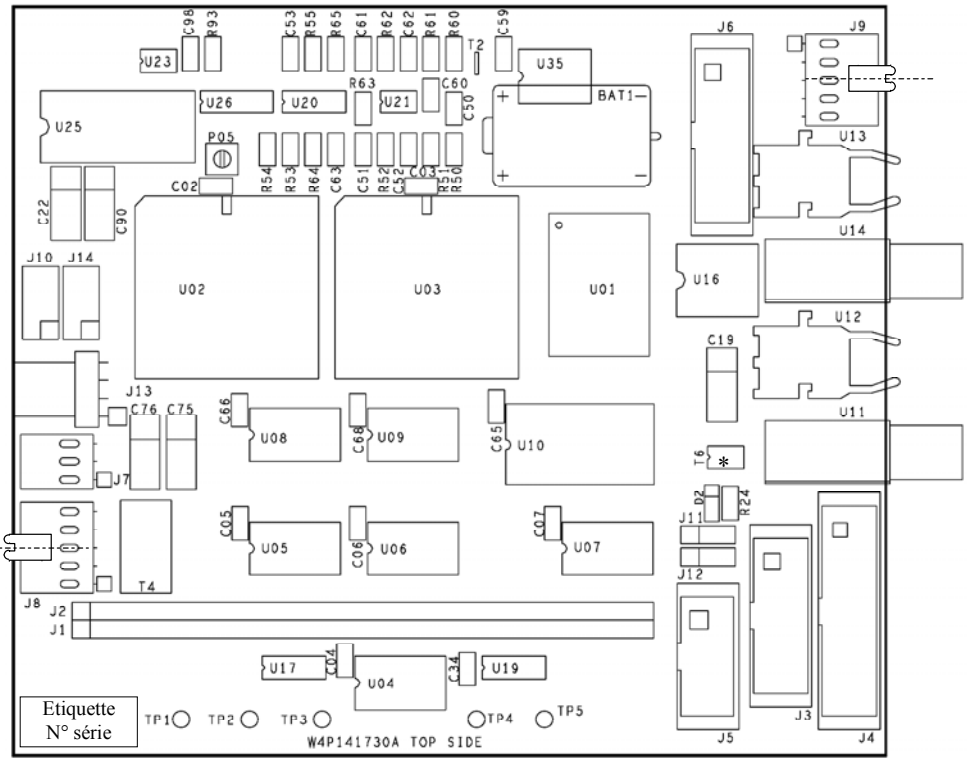
ART NO : W1411742 SHT : 1/1
PRT NO : W4P141641A
DWG NO : W4L141641A
DSK NO : W1K140851

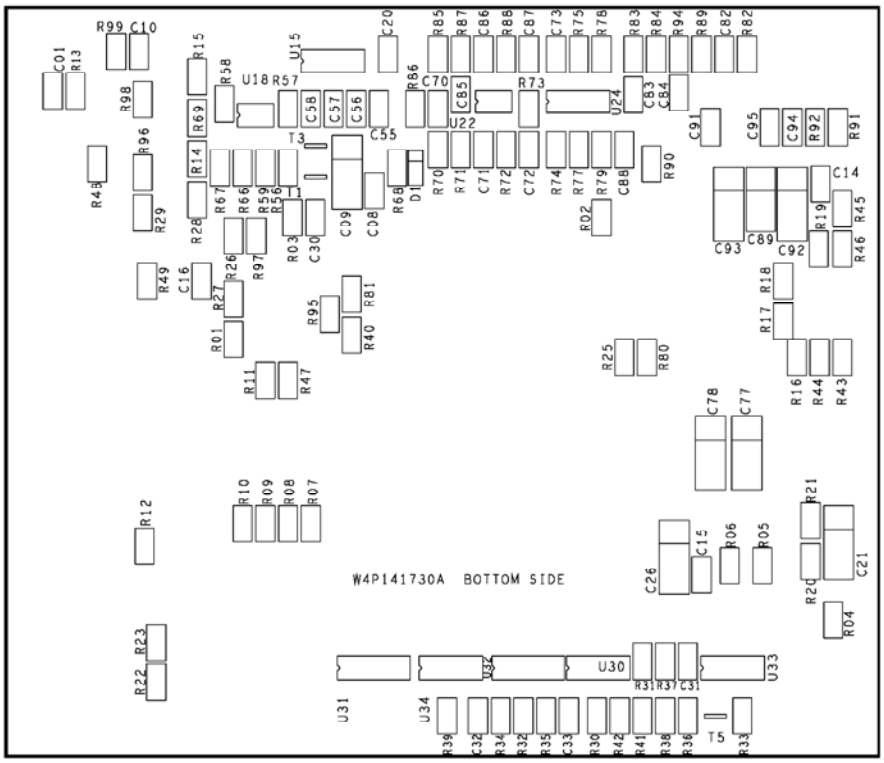
# 4. DIAGRAMS


PC BUS
XILINX
UART
TO CPU/VGA BOARD
TO GRAPH
TO SENSOR TREATMENT
TO KEYBOARD
TO TEMPERATURE SENSOR
TO CONFIGURATION CONNECTOR
TO POWER SUPPLY
TO SPO2 CPU BOARD
ALARM TREATMENT
OTP
ON/OFF
MAGSCREEN LINK
MAGFILE LINK
MAGSCREEN
INTERFACE PC
PC INTERFACE
ART NO : W1411742
PRT NO : W4P141641A
DWG NO : W3S141641A
DSK NO : W1K140851
SHT NO : 1/2
DRAWN
APPROV
MODIFICATION
ECL0
ECL1
ECL2
ECL3
03/98
04/98
09/98
11/98

# 4. DIAGRAMS


IN1
IN2
IN3
VCO/512
S_ON
SPAR
IN4
U21A TLC27L2
U21B TLC27L2
U22A TLC27L2
U23A TLC27L2
U22B TLC27L2
U23B TLC27L2
T2 BC850
U20A 4066
U20B 4066
U20C 4066
U20D 4066
U24A 4066
U24B 4066
U24C 4066
U24D 4066
OP[8..15]
PHASE- LOCKED LOOP
COMPARATOR 1
COMPARATOR 2
SOURCE FOLLOWER
U26 4046
BOOTSTRAP SVR
U25 TDA1904
P05 10k
J7
VERS HAUT-PARLEUR
TO LOUDSPEAKER
MAGSCREEN
TRAITEMENT ALARMES
ALARMS TREATMENT
ART NO : W1411742
PRT NO : W4P141641A
DWG NO : W4S141641A
DSK NO : W1K140851
SHT NO : 2/2
DRAWN
APPROV
MODIFICATION
ECL0
03/98
ECL1
ECL2
ECL3
04/98
09/98
11/98
adam



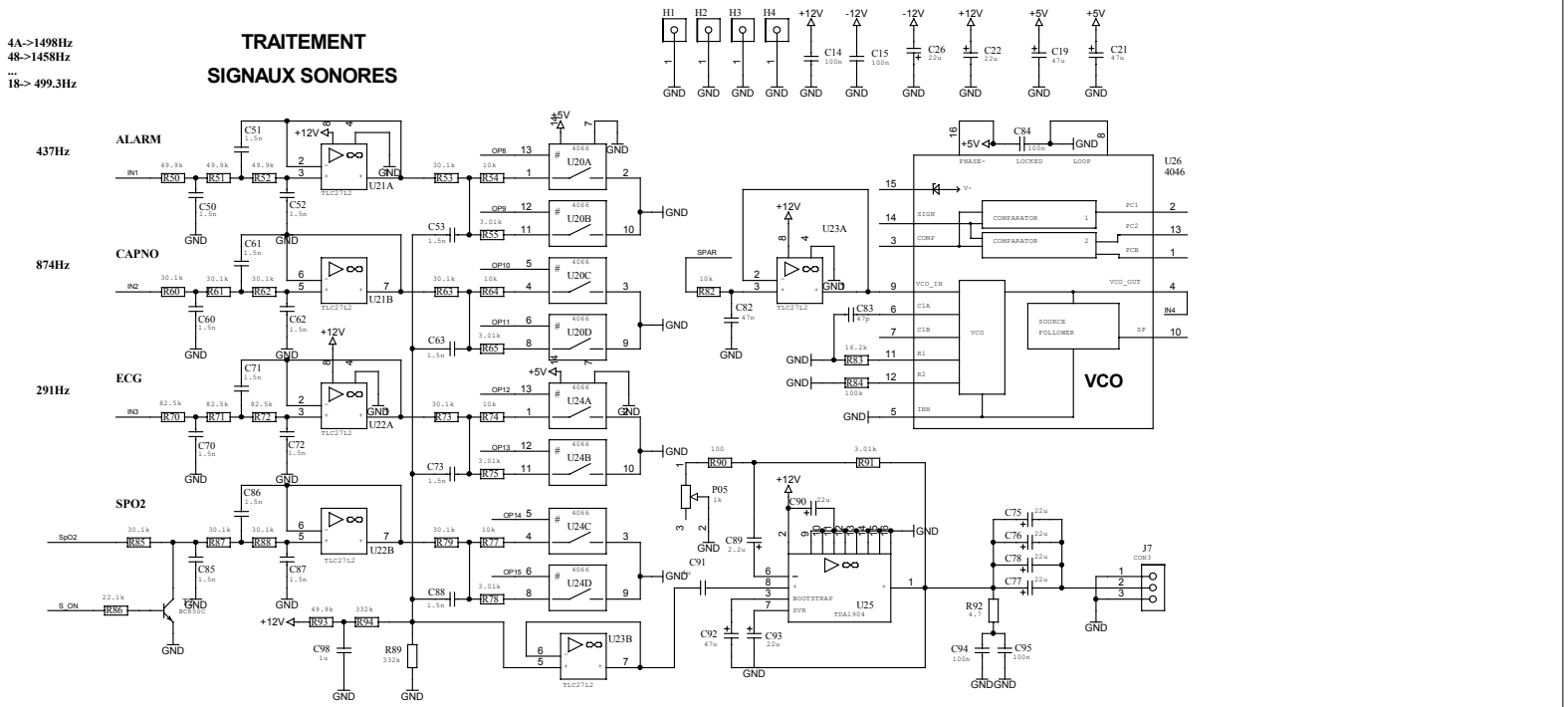

* = pas monté / *not mounted*

Interface PC
PC interface

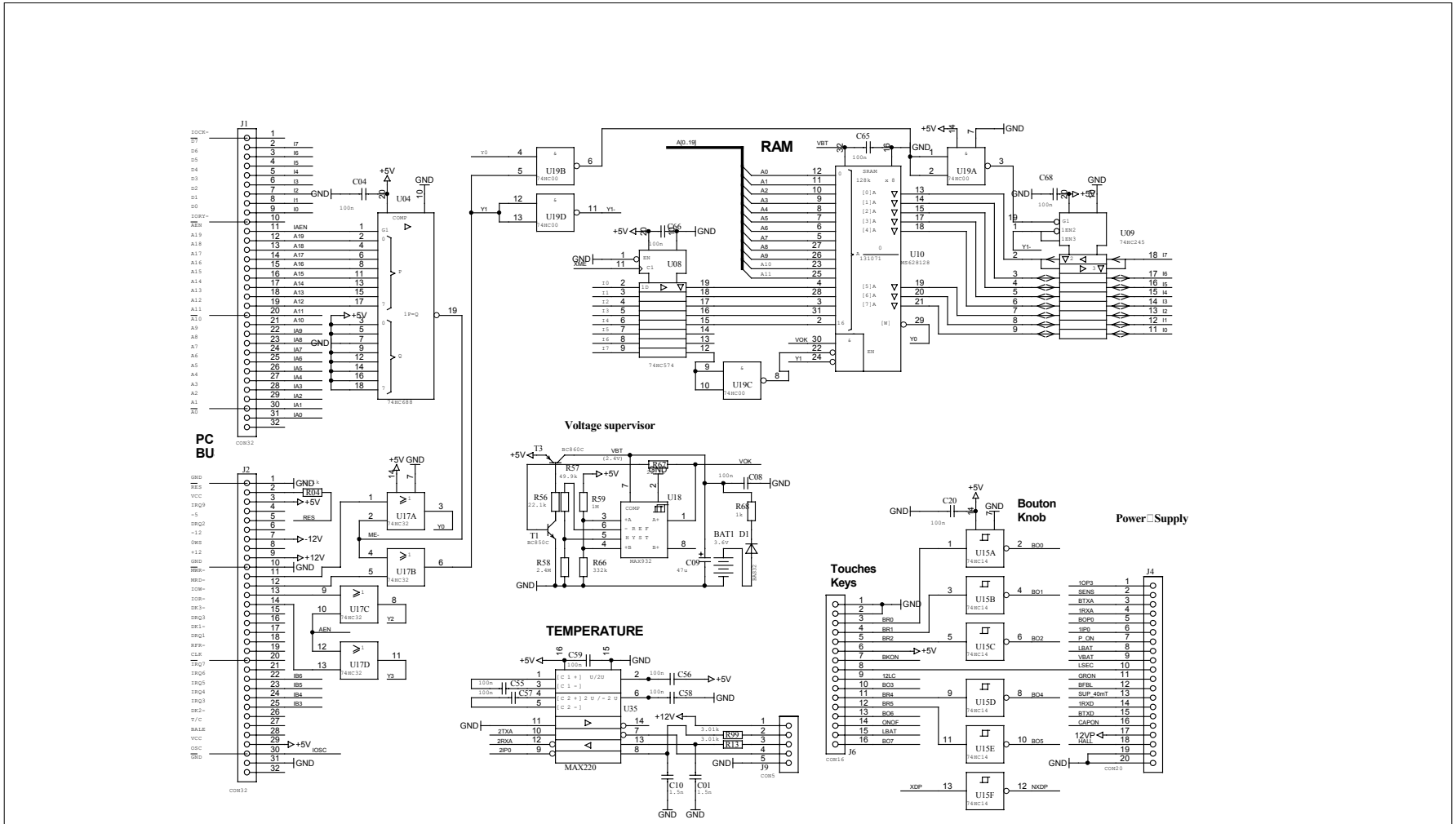
| DRAWN | APPROV | MODIFICATION | | | |
|---|---|---|---|---|---|
| CK | MK | | | | |
| ECL1 06/ 01 | ECL1 06/ 01 | | | | |

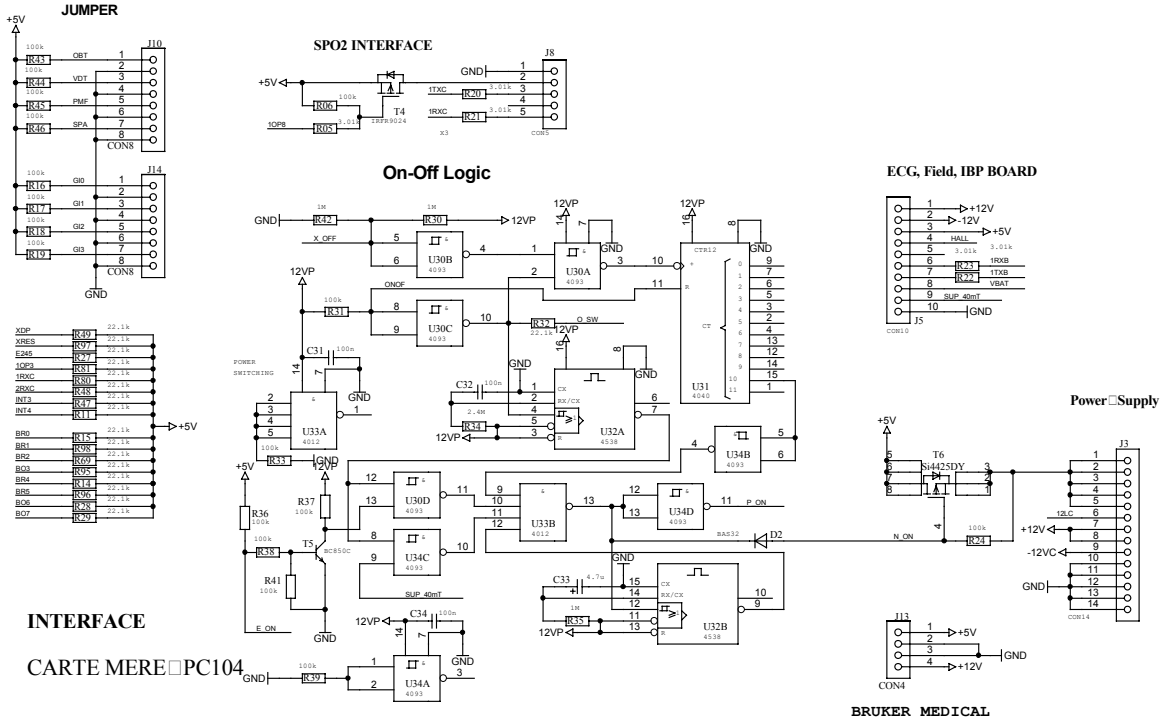
ART : W1412096
PRT : W4P141730A
DGW : W4L141730A
SHT : 1/1

SCHILLER MEDICAL S.A.

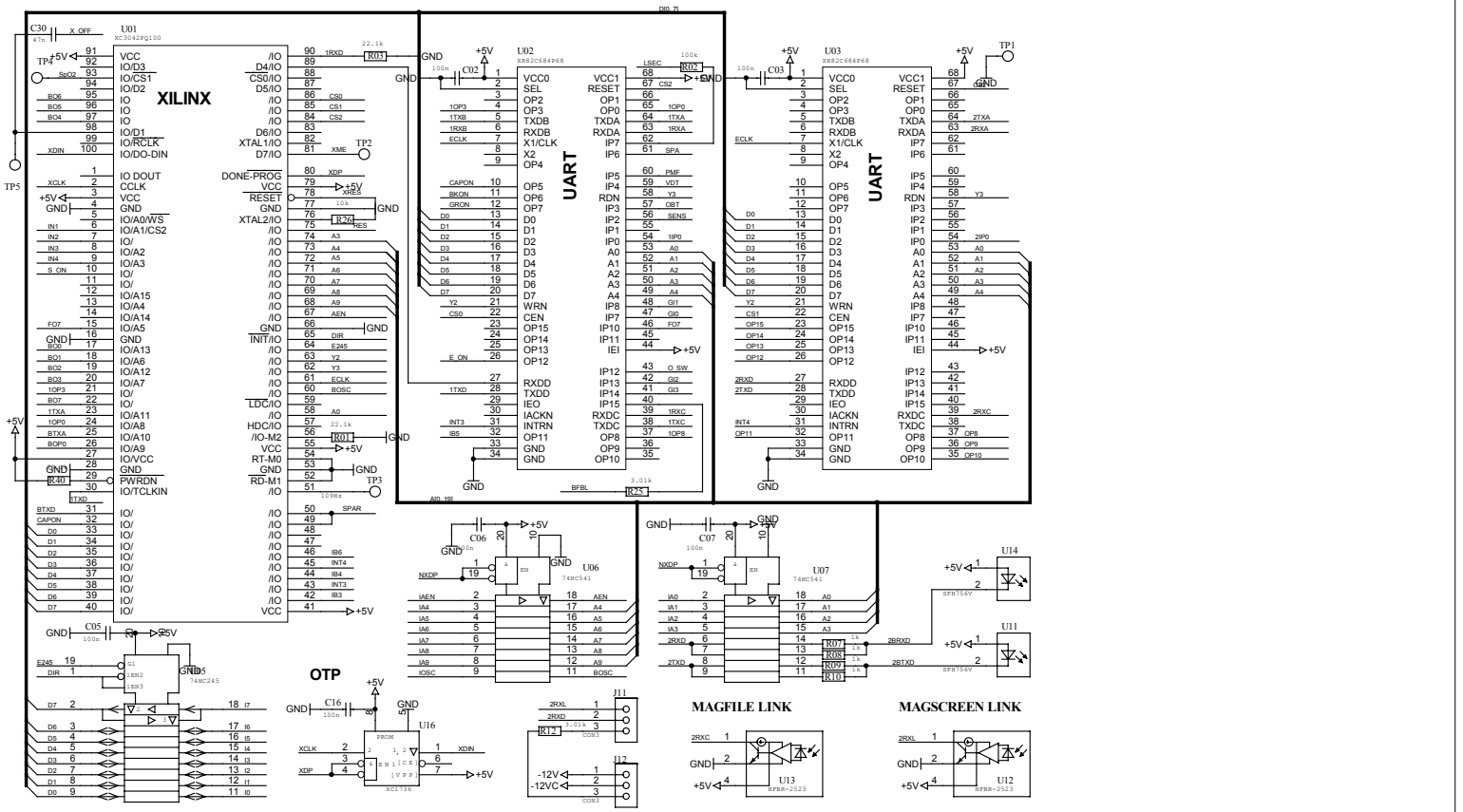



| | | | | |
|---|---|---|---|---|
| *Traitement signaux Sonores./ Alarm and audio signals* | | | Schema No. : *W4A14159B* | SCHILLER MEDICAL S.A.S. |
| Project : *INTERFACE MAGLIFE C* | | PCB No.:*W4P141730B* | Date: *21 06 2001* | 4, rue Louis Pasteur ZAE Sud BP50 67162 WISSEMBOURG CEDEX |
| Size: *A3* | Drawn by : *G.M B.O* | Art. No. : *W1411566A* | Sheet *1* of *4* | |


RAM
Voltage supervisor
TEMPERATURE
PC BU
Touches Keys
Bouton Knob
Power Supply
ISA BUS ,RAM memory,RS232 Interface
Project : INTERFACE MAGLIFE C
Size: A3
Drawn by : G.M B.O
PCB No.:W4P141730B
Art. No. : W1411566A
Schema No. : W4S14149B
Date: 21 06 2001
Sheet 2 of 4
SCHILLER MEDICAL S.A.S.
4, rue Louis Pasteur
ZAE Sud BP50
67162 WISSEMBOURG CEDEX

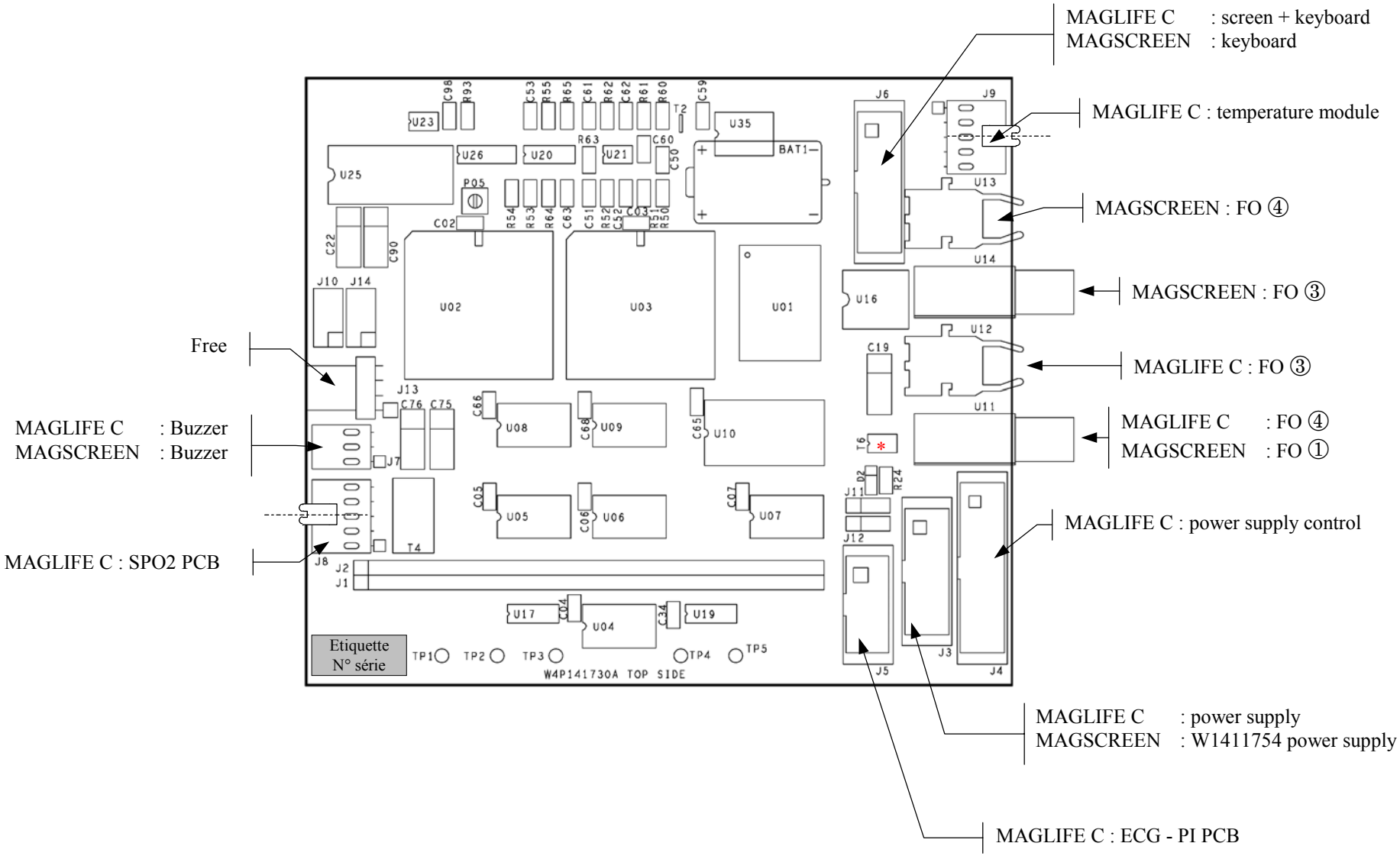


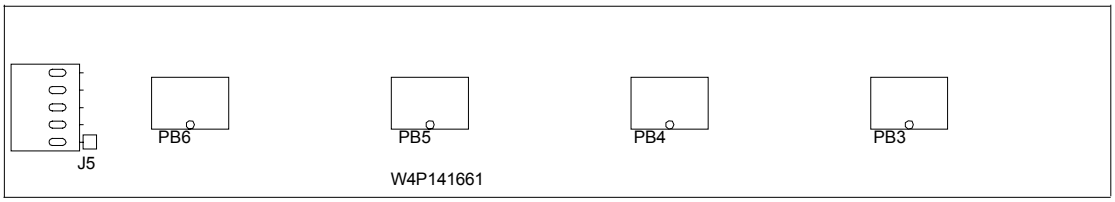

| | | | |
|---|---|---|---|
| *ON OFF Logic , Power supply* | | Schema No. : *W4S141596B* | SCHILLER MEDICAL S.A.S. 4, rue Louis Pasteur ZAE Sud BP50 67162 WISSEMBOURG CEDEX |
| Project : *INTERFACE MAGLIFE C* | PCB No.:*W4P141730B* | Date: *21 06 2001* | |
| Size: *A3* | Drawn by : *G.M B.O* | Art. No. : *W1411566A* | Sheet *3* of *4* |




| | | | |
|---|---|---|---|
| XILINX ,UARTS, Optical Interface | | Schema No. : W4S141596B | SCHILLER MEDICAL S.A.S. 4, rue Louis Pasteur ZAE Sud BP50 67162 WISSEMBOURG CEDEX |
| Project : INTERFACE MAGLIFE C | PCB No.:W4P141730B | Date: 21 06 2001 | |
| Size: A3 | Drawn by : G.M | Art. No. : W1411566A | Sheet 4 of 4 | |

## W7412096 : PCB INTERFACE MAGLIFE C


MAGLIFE C : screen + keyboard
MAGSCREEN : keyboard
MAGLIFE C : temperature module
MAGSCREEN : FO ④
MAGSCREEN : FO ③
MAGLIFE C : FO ③
MAGLIFE C : FO ④
MAGSCREEN : FO ①
MAGLIFE C : power supply control
MAGLIFE C : power supply
MAGSCREEN : W1411754 power supply
MAGLIFE C : ECG - PI PCB
Free
MAGLIFE C : Buzzer
MAGSCREEN : Buzzer
MAGLIFE C : SPO2 PCB
Etiquette N° série
W4P141730A TOP SIDE

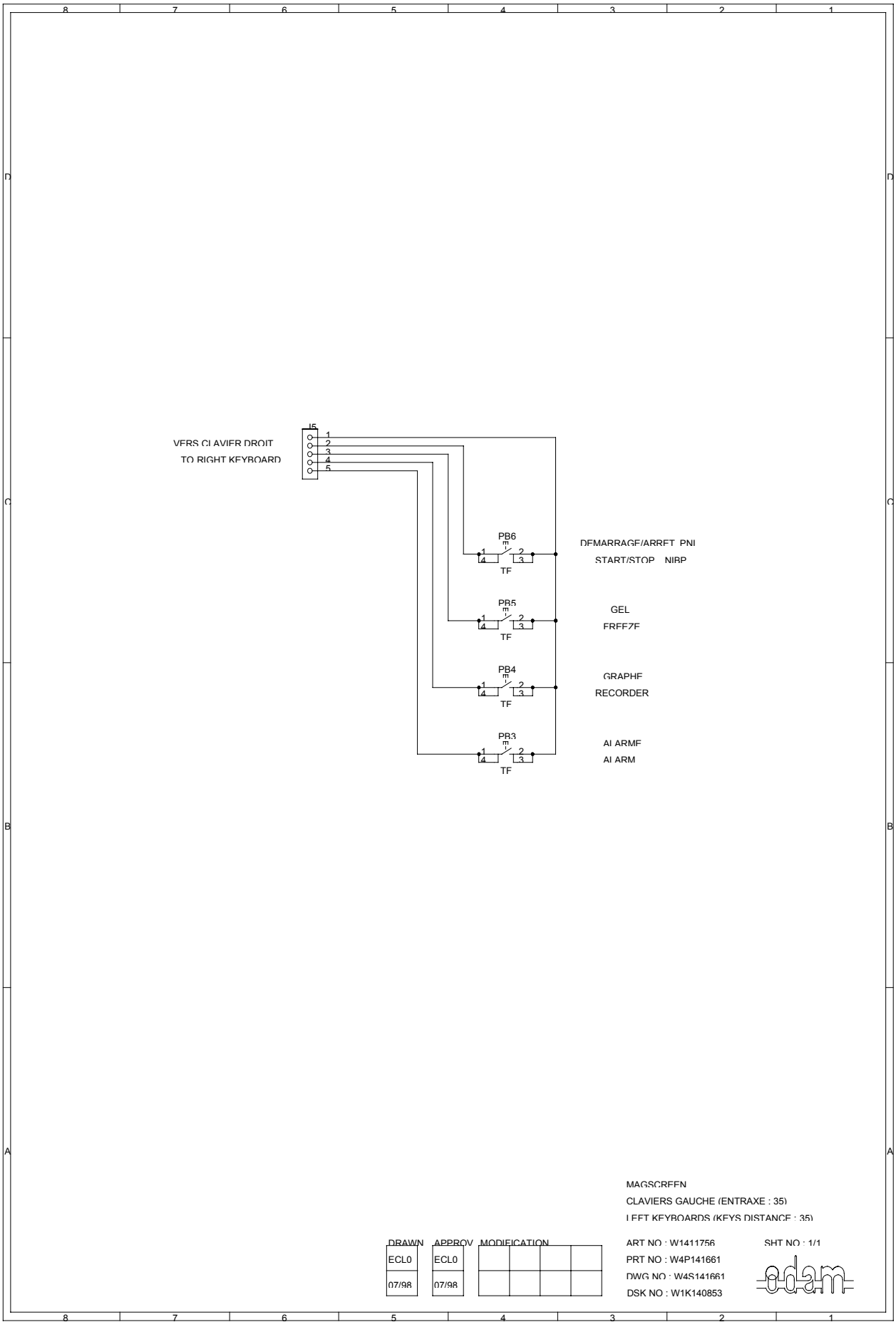


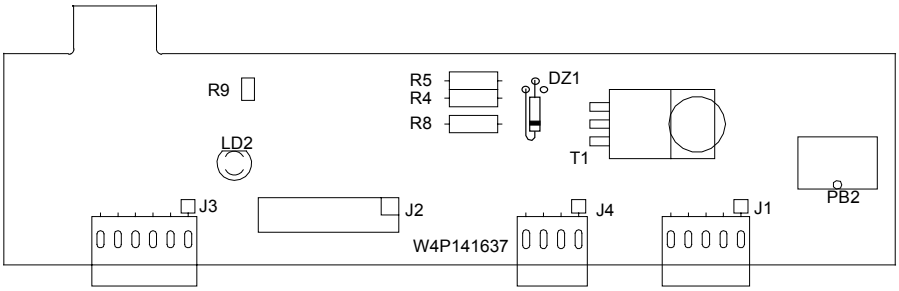

MAGSCREEN
CLAVIER GAUCHE
LEFT KEYBOARD

| DRAWN | APPROV | MODIFICATION |
|---|---|---|
| ECL0 | ECL0 | |
| 07/98 | 07/98 | |

ART NO : W1411756
PRT NO : W4P141661
DWG NO : W4L141661
DSK NO : W1K140853

SHT : 1/1


VERS CLAVIER DROIT
TO RIGHT KEYBOARD
J5
1
2
3
4
5
PB6
TF
DEMARRAGE/ARRET PNI
START/STOP NIBP
PB5
TF
GEL
FREEZE
PB4
TF
GRAPHE
RECORDER
PB3
TF
AI ARME
AI ARM
MAGSCREEN
CLAVIERS GAUCHE (ENTRAXE : 35)
LEFT KEYBOARDS (KEYS DISTANCE : 35)
DRAWN
APPROV
MODIFICATION
ECL0
07/98
ECL0
07/98
ART NO : W1411756
PRT NO : W4P141661
DWG NO : W4S141661
DSK NO : W1K140853
SHT NO : 1/1
adam

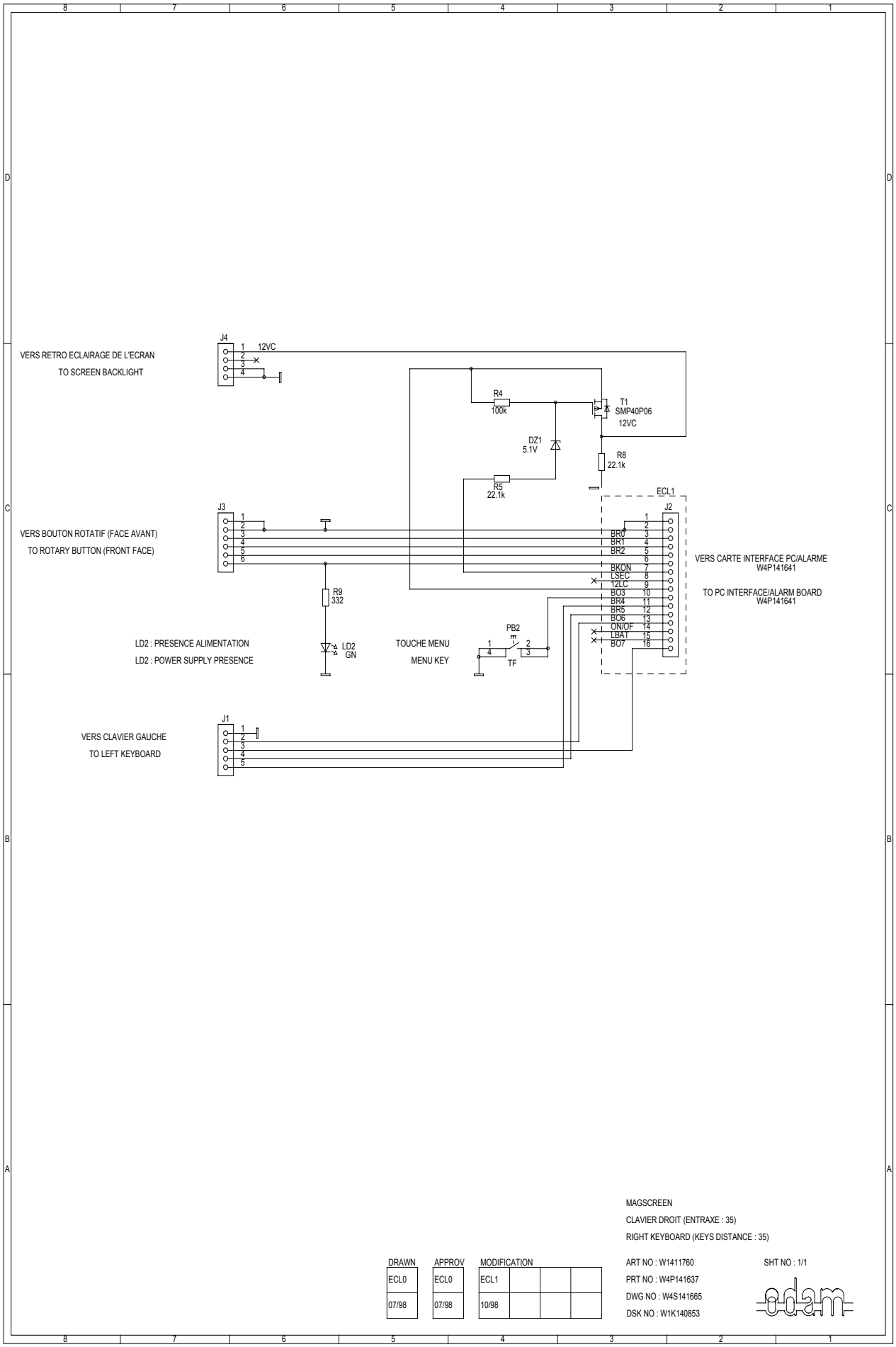



MAGSCREEN
CLAVIER DROIT
RIGHT KEYBOARD

| DRAWN | APPROV | MODIFICATION |
|---|---|---|
| ECL0 | ECL0 | ECL1 |
| 07/98 | 07/98 | 10/98 |

ART NO : W1411760
PRT NO : W4P141637
DWG NO : W4L141665
DSK NO : W1K140853

SHT : 1/1


VERS RETRO ECLAIRAGE DE L'ECRAN
TO SCREEN BACKLIGHT
J4
12VC
R4
100k
T1
SMP40P06
12VC
DZ1
5.1V
R8
22.1k
R5
22.1k
ECL1
J2
J3
VERS BOUTON ROTATIF (FACE AVANT)
TO ROTARY BUTTON (FRONT FACE)
BR0
BR1
BR2
BKON
LSEC
12LC
BO3
BR4
BR5
BO6
ON/OF
LBAT
BO7
VERS CARTE INTERFACE PC/ALARME
W4P141641
TO PC INTERFACE/ALARM BOARD
W4P141641
R9
332
LD2 : PRESENCE ALIMENTATION
LD2 : POWER SUPPLY PRESENCE
LD2
GN
TOUCHE MENU
MENU KEY
PB2
TF
J1
VERS CLAVIER GAUCHE
TO LEFT KEYBOARD
MAGSCREEN
CLAVIER DROIT (ENTRAXE : 35)
RIGHT KEYBOARD (KEYS DISTANCE : 35)
DRAWN
APPROV
MODIFICATION
ECL0
07/98
ECL0
07/98
ECL1
10/98
ART NO : W1411760
PRT NO : W4P141637
DWG NO : W4S141665
DSK NO : W1K140853
SHT NO : 1/1

# PC mother board AAEON

# Carte mère AAEON

## Introduction

The SBC-456/456E is an all-in-one single board 486 computer with an **onboard flat panel/CRT SVGA controller** and **PCI Ethernet interface (SBC-456E)**. It packs all the functions of an industrial computer and its display capabilities onto a single, half-size card. This means the SBC-456/456E is your absolute best solution for embedded applications.

The onboard PCI-bus, flat panel/CRT SVGA controller uses the CHIPS 65550 chipset with up to 2 MB of video memory (onboard 1MB). This chipset, used with the local PCI-bus, enables 32-bit graphic throughput at up to 33 MHz. Excellent for display-intensive applications, it supports various LCD types including TFT, STN, B/W, and EL.

The onboard Ethernet Realtek RTL 8029AS PCI bus Ethernet controller supports remote boot ROM functions (SBC-456E only).

The SBC-456/456E supports the M-Systems DiskOnChip 2000 (optional) which is a new generation of high performance single-chip Flash Disk. It provides a Flash Disk (as a BIOS expansion) which doesn't require any bus, slots, or connectors. It is also the optimal solution for Single Board Computers because of its small size, easy integration, plug-and-play functionality, and its low power consumption. The DiskOnChip is available in capacities from 2MB to 144MB and fits in a standard 32-pin DIP socket.

Another feature of the SBC-456/456E is the inclusion of a high speed, local bus IDE controller. This controller supports (through ATA PIO) mode 3 and mode 4 hard disks, enabling data transfer rates in excess of 11 MB/second. Up to four IDE devices can be connected, including large hard disks, CD-ROM drives, tape backup drives, or other IDE devices. The built-in, enhanced IDE controller provides a 4-layer, 32-bit, posted write buffer and a 4-layer, 32-bit read-prefetch buffer to boost IDE performance.

Onboard features include one high speed RS-232 serial port, and one RS-232/422/485 serial port with 16C550 UARTs, one bidirectional SPP/EPP/ECP parallel port and a floppy drive controller. In addition to the 486's 16 KB of onchip cache memory, the SBC-456/456E includes an extra 128 KB of L2 onboard cache memory.

If program execution is halted by a program bug or EMI, the board's watchdog timer can automatically reset the CPU or generate an interrupt. This ensures reliability in unmanned or standalone systems.

All configuration display and Ethernet (SBC-456E) is done through software. A single Flash chip holds the system BIOS, VGA BIOS, and the network boot ROM image. This minimizes the number of chips and eases configuration. You can change the display BIOS or install a boot ROM simply by programming the Flash chip.

The SBC-456/456E **supports 5 V EDO DRAM**. It also provides two 72-pin SIMM (Single In-line Memory Module) sockets for its onboard system DRAM. These sockets give you the flexibility to configure your system from 4 MB to 64 MB of DRAM using the most economical combination of SIMMs.

## Features

- **CPU:** AMD DX5-133 CPU (SQFP Type)
- **Level 2 cache:** Onboard 128KB L2 cache
- **VGA controller:** C&T 65550 with display memory 1MB onboard, 2MB optional
- **DiskOnChip:** One 32-pin DIP socket supports the M-Systems DiskOnchip 2000 series, memory capacity from 2MB to 144MB
- **Ethernet interface (SBC-456E):** Supports 10Base-T, remote boot ROM function

## Specifications

**CPU:** AMD DX5-133 (SQFP Type)

**BIOS:** AMI Flash BIOS

**Chipset:** ALi M 1487 / M1489

**Level 2 cache:** Onboard 128KB L2 cache

**System memory:** 4MB to 64MB. Two 72-pin SIMM sockets

**DMA channel:** 7

**Interrupt levels:** 15

**Enhanced IDE:** Supports up to two IDE drives, supports PIO mode 3/4 and Bus Master

**FDD interface:** Supports up to two floppy disk drives, 5.25" (360KB and 1.2MB) and/or 3.5" (720KB, 144MB, and 2.88MB)

**Serial port:** One RS-232 and one RS-232/422/485 serial port. Two 16C550 serial UARTs

**IrDA interface:** One IrDA connector reserved for future use

**Keyboard connector:** 6-pin mini-DIN connector supports standard PC/AT keyboard and PS/2 mouse

**Watchdog Timer:** Can generate a system reset, IRQ15, or NMI. Software selectable timeout interval (2sec ~ 128min, 1 sec/step)

**VGA controller:** C&T 65550

**Display memory:** 1MB onboard, 2MB optional

**Display type:** Supports CRT and LCD (TFT, STN, EL, and Mono) displays simultaneously

**Resolution:** Supports up to 1024 x 768 @ 64K colors

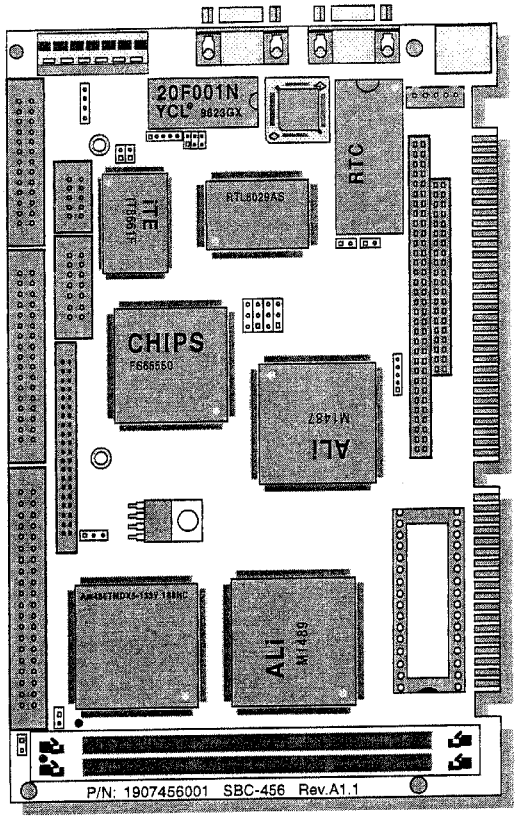
**Ethernet controller (for 456E):** Realtek RTL8029AS 10-BaseT PCI-Bus Ethernet controller

**Ethernet interface (for 456E):** Software drivers available. Supports remote boot ROM function

**SSD interface:** One 32-pin DIP socket supports the M-Systems DiskOn-Chip 2000 series, memory capacity from 2MB to 144MB

**Power supply voltage:** +5V (4.75V to 5.25V)
+12V (11.4V to 12.6V)
**Max. power Requirement:** +5V @ 3A
**Operating temperature:** 32 to 140°F (0 to 60°C)
**Board size:** 7.3" (L) x 4.8" (W) (185 mm x 122 mm)
**Weight:** 0.23 kg

## Board layout



# PC mother board AAEON
# Version B

# Carte mère AAEON
# Version B

## Introduction

The SBC-456/E Ver.B is an all-in-one single board 486 computer with an **onboard SM-712 CRT/LCD controller, 10/100 Base-T Ethernet controller**, and **8MB EDO DRAM**. It packs all the functions of an industrial computer but still fits in a single, half-size card. This means the SBC-456/E Ver.B is absolutely your best solution for embedded applications.

The onboard PCI-bus, flat panel/CRT SVGA controller uses the SM-712 chipset with up to 2 MB of video memory. This chipset, used with the local PCI-bus, enables 32-bit graphic throughput at up to 33 MHz. It can support various LCD types, including TFT, DSTN, B/W, and EL due to it's excellent performance on display-intensive applications.

The onboard Ethernet Realtek RTL 8139C controller supports remote boot ROM functions.The SBC-456/E Ver.B supports the M-Systems DiskOnChip 2000 , DiskOnModule, and Compact FlashCard which are new generation of high performance storage units.

Another outstanding feature of the SBC-456/E Ver.B is the inclusion of a high speed, local bus IDE controller, which supports (through ATA PIO) mode 3 and mode 4 hard disks, enabling data transfer rates in excess of 11 MB/second. Up to four IDE devices can be connected, including large hard disks, CD-ROM drives, tape backup drives, or other IDE devices. The built-in, enhanced IDE controller provides a 4-layer, 32-bit, posted write buffer and a 4-layer, 32-bit read-prefetch buffer to boost IDE performance.

Onboard features include three high speed RS-232 serial ports, and one RS-232/422/485 serial port with 16C550 UARTs, one bidirectional SPP/EPP/ECP parallel port and a floppy drive controller. In addition to the 486's 16 KB of onchip cache memory, the SBC-456/E Ver.B includes an extra 128 KB of L2 onboard cache memory.

If program execution is halted by a program bug or EMI, the board's

watchdog timer can automatically reset the CPU or generate an interrupt. This ensures reliability in unmanned or standalone systems.

All configuration display and Ethernet (SBC-456/E Ver. B) is done through software. A single Flash chip holds the system BIOS and the network boot ROM image. This minimizes the number of chips and eases configuration. You can change the display BIOS or install a boot ROM simply by programming the Flash chip.

The SBC-456/E Ver. B **supports 5 V EDO DRAM.** It also provides one 72-pin SIMM (Single In-line Memory Module) socket for its onboard system DRAM. The socket gives you the flexibility to configure your system from 4 MB to 64 MB of DRAM by using the most economical combination of SIMMs.

## Features

- Onboard AMD 486DX5-133 CPU (SQFP)
- SMI-712 LCD controller
- Built-in 2MB SGRAM memory
- 10/100Base-T Ethernet
- DOC supported
- PC/104 expansion connector
- 4 COMs
- CFD socket supported
- DOM Module Supported

## Specifications

### General Functions

**CPU:** AMD 486DX5-133
**CPU type:** Onboard SQFP
**Bus Interface:** ISA bus
**BIOS:** AWARD 128KB FLASH BIOS
**Chipset:** ALi M1487/1489
**I/O Chipset :** Two ITE IT8661F, fully 16-bit I/O decoded
**L2 Cache:** Onboard 128KB L2 Cache,and could be upgraded to 512KB by factory
**Memory:** Onboard 4/8M(standard) EDO RAM (bank 0) and One 72-pin SIMM sockets support up to 128Mbytes Fast Page or EDO DRAM
**Enhanced IDE:** Supports two IDE devices and Bus Master mode with data transfer rate 16.7 MB/sec (One channel reserved for CFD)
**FDD interface:** Supports two floppy disk drives, 5.25" (360 KB and 1.2 MB) and/or 3.5" (720KB, 1.44MB, and 2.88MB)
**Parallel port:** One bi-directional parallel port which supports SPP, ECP, and EPP modes
**Serial port:** Three RS-232 and one RS-232/422/485 serial ports. Ports can be configured as COM1, COM2, COM3, COM4, or disabled individually. (16C550 equivalent)
**KB/PS2 Mouse connector:** 6-pin mini-DIN connector supports PC/AT keyboard and PS/2 mouse. Additional 5-pin header supports PC/AT keyboard for IPC applications
**Real Time Clock Benchmark** or equivalents, powered by lithium battery for data retention
**Watchdog timer:** Can generate a system reset, IRQ15, or NMI. Software selectable time-out interval (2 sec. ~128 min., 1 sec./step)
**DMA:** 7 DMA channels (8237 equivalent)
**Interrupt:** 15 interrupt levels (8259 equivalent)
**Power management:** I/O peripheral devices support power saving and doze/standby/suspend modes. APM 1.1 compliant

### Flat Panel/CRT Interface

**Chipset:** SM-712
**Display memory:** 2MB
**Display type:** Supports non-interlaced CRT and LCD (TFT, DSTN, and MONO) displays. Can display both CRT and Flat Panel simultaneously
**Resolution:** Up to 1024x768 24 bit colors (CRT/LCD simultaneous Display)

### Ethernet Interface

**Chipset:** Realtek 8139C 10/100Base-T Ethernet controller
**Ethernet interface:** Onboard 100Base-T RJ-45 connector. Optional Remote boot ROM function
**SSD Interface:** DOC /DOM/CFD

### Expansion Interface

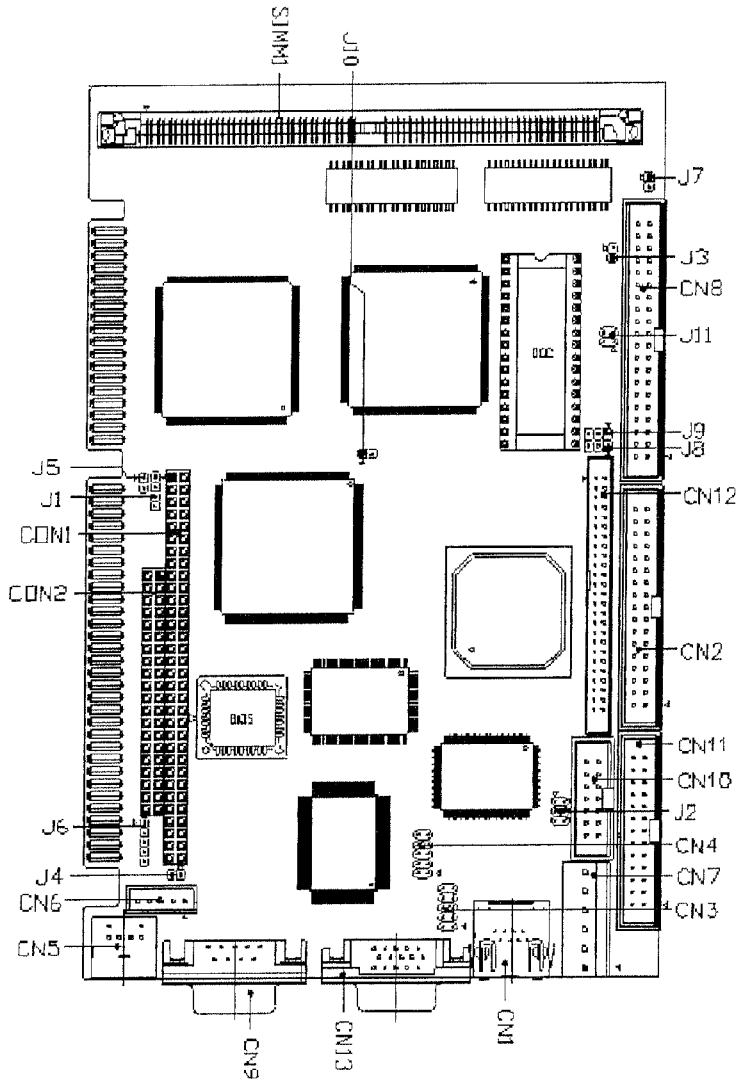
**PC/104 connector:** One 16-bit 104-pin connector onboard

### Mechanical and Environmental

**Power supply voltage:** +5 V (4.75 V to 5.25 V), +3.3 V, -12 V
**Operating temperature:** 32 to 140°F (0 to 60°C)
**Board size** 7.3" (L) x 4.8" (W) (185 mm x 122 mm)

# 4. DIAGRAMS

## Board Layout



# 5. PARTS LISTS


| Part number | Assemblies | Page |
|---|---|---|
| **W1411675** | **MAGSCREEN (complet device)** | 5-2 |
| **W1411751** | **« automatic cutoff » printed circuit - W4P141654** | 5-4 |
| **W1411804** | **« automatic cutoff » printed circuit - W4P141654A** | 5-5 |
| **W1411742** | **« PC interface » printed circuit - W4P141641A** | 5-6 |
| **W7412096** | **« PC interface » printed circuit - W4P141730A** | 5-10 |
| **W1411756** | **« left keyboard » printed circuit - W4P141661** | 5-14 |
| **W1411760** | **« right keyboard » printed circuit - W4P141637** | 5-15 |

# 5. PARTS LISTS

**Page : 1/2**

**Diagram : ECL0**
**Assembly : W1411675**
**Designation : MAGSCREEN**
**Reference :**

| REF. | PART NUMBER | DESIGNATION | NBRE |
|---|---|---|---|
| | 32512 | ACCBL ATTACHE ADHES 19X19MM | 6 |
| | 37512 | ACCBL BAGUE REPERE IMPR.1 JA | 1 |
| | 37514 | ACCBL BAGUE REPERE IMPR.3 JA | 1 |
| | 37515 | ACCBL BAGUE REPERE IMPR.4 JA | 1 |
| | 37516 | ACCBL BAGUE REPERE IMPR.5 JA | 1 |
| | 3033 | ACCBL CAVALIER F 2.54MM | 1 |
| | W1404562 | AXE DE CDE CLAVIER MAGSCREEN | 5 |
| | W1404391 | BLINDAGE ECRANS MAG2 | 1 |
| | W1404377 | BOUTON MAGSCREEN | 1 |
| | W1404517 | CBL CI SELECTEUR - CI CLAVIER | 1 |
| | W1404594 | CBL INTERFACE - CLAVIER | 1 |
| | W1404518 | CBL LIAISON CLAVIERS | 1 |
| | W1404419 | CBL LIAISON ECRAN-CARTE PC | 1 |
| | W1404601 | CBL LIAISON SERIE COUPURE AUTO | 1 |
| | W1404529 | CBL RETRO ECLAIRAGE | 1 |
| | W1404542 | CI CARTE MERE 486LCD/S MAGL.C | 1 |
| | W1411759 | CI CLAVIER G+D ENTR35 MAGC MTE | 1 |
| | W1411751 | CI COUPURE AUTO MAGSCREEN MONT | 1 |
| | W7411742 | CI INTERF PC/ALARMES MAGC MONT | 1 |
| | 5811 | CN CONTACT F SRT MODU4 AWG2420 | 4 |
| | 5659 | CN F 3 BOI MODU4 | 1 |
| | 15362 | CN F 4 BOI MODU4 | 1 |
| | 31880 | CN F 40 CPL WWP ANTITRACTION | 1 |
| | 5615 | CN M 3 C PRT MODU2 | 1 |
| | 72225 | CN M 6 C PRT MODU2 | 1 |
| | 15363 | CN VERROUILLAGE ANTITRAC MODU2 | 2 |
| | 15389 | CN VERROUILLAGE MODU2 | 2 |
| | 8493 | COND CMS 1206 100N 50V 20% X7R | 3 |
| | W1404069 | CONVERTISSEUR POUR TFT 10.4" | 1 |
| | W1404369 | COUVERCLE 1 MAGSCREEN | 1 |
| | W1404370 | COUVERCLE 2 MAGSCREEN | 1 |
| | 2019 | EFX ECROU HU M3 PA | 2 |
| | 72832 | EFX ECROU POUR EMBASE F A SOUD | 1 |
| | 35366 | EFX ENTRE T M3X12 PA | 4 |
| | 9594 | EFX ENTRE T M3X15 LTNNI | 4 |
| | 35364 | EFX ENTRE T M3X5 PA | 4 |
| | 32767 | EFX ENTRE T M3X8 FILT LTNNI | 12 |
| | 11588 | EFX RONDEL EVENT M3 INX A2 | 6 |
| | 32706 | EFX RONDEL EVENT M8 INX A2 | 2 |
| | 11187 | EFX RONDEL PLATE M3 INX A2 | 12 |
| | 11191 | EFX RONDEL PLATE M8 INX A4 | 2 |
| | 32730 | EFX VIS H M8X40 INX A2 | 2 |
| | 90427 | EFX VIS TB SIX PANS CREUX M3X6 | 12 |
| | 70329 | EFX VIS TCB CRUCI M3X10 INX A2 | 4 |
| | 70345 | EFX VIS TCB CRUCI M3X6 INX A2 | 4 |
| | 25573 | EFX VIS TCB CRUCI M3X8 INX A2 | 6 |

# 5. PARTS LISTS

**Page : 2/2**

**Diagram : ECL0**
**Assembly : W1411675**
**Designation : MAGSCREEN**
**Reference :**

| REF. | PART NUMBER | DESIGNATION | NBRE |
|---|---|---|---|
| | 25050 | EFX VIS TCB CRUCI M4X10 INX A2 | 12 |
| | 32711 | EFX VIS TCB CRUCI M4X6 INX A2 | 6 |
| | 28690 | EFX VIS TF CRUCI M4X10 INX A4 | 7 |
| | 72830 | EMBASE A SOUDER F | 1 |
| | W1404380 | EMBASE MAGSCREEN | 1 |
| | W1404552 | EMBASE MAGSCREEN | 2 |
| | W1404603 | ASSEMBLY PIED/SOCLE MAGSCREEN | 1 |
| | W14E0372 | ETIQU MARQUAGE CE 0459 | 1 |
| | W14E0423 | ETIQU SORTIE CN MAGSCREEN | 1 |
| | W1404368 | FACE AVANT MAGSCREEN | 1 |
| | W1404371 | FOLIO MAGSCREEN | 1 |
| | 72862 | HAUT-PARLEUR 8 OHMS 0.8W D47 | 1 |
| | 68477 | LCD 640X480 TFT COLOR 10.4" | 1 |
| | 72258 | MECMB BUTEE ADHES TR 9.5X3.8 | 4 |
| | 72829 | PC MEM BARETTE 8MO 72 PINS | 1 |
| | W1404378 | PROTECTION BOUTON MAGSCREEN | 1 |
| | 20730 | RES CMS 332 1% 0.25W 1206 | 1 |
| | W1404381 | SUPPORT CARTE MAGSCREEN | 1 |
| | 72646 | SW ROTA 1X16 PRT | 1 |
| | W1404374 | VITRE MAGSCREEN | 1 |

# 5. PARTS LISTS

**Page : 1/1**

**Diagram : W4S141654 - ECL0**
**Assembly : W1411751**
**Designation : AUTOMATIC CUTOFF IC**
**Reference : W4P141654**

| REF. | PART NUMBER | DESIGNATION | NBRE |
|---|---|---|---|
| C1 | 8493 | COND CMS 1206 100N 50V 20% X7R | |
| C2 | 51557 | COND CMS TANTAL 22U 20V 20% | |
| C3 | 8493 | COND CMS 1206 100N 50V 20% X7R | |
| C4 | 51558 | COND CMS TANTAL 15U 10V 20% | |
| C6 | 8493 | COND CMS 1206 100N 50V 20% X7R | |
| C7 | 8493 | COND CMS 1206 100N 50V 20% X7R | |
| C8 | 8493 | COND CMS 1206 100N 50V 20% X7R | |
| D1 | 22029 | DIODE CMS BAS32L SOD80 | |
| F1 | 35014 | FUS TR5 8X7MM 1.6A T 250V | |
| F2 | 35469 | FUS TR5 8X7MM 0.05A T 250V | |
| F3 | 35430 | FUS TR5 8X7MM 2.5A T 250V | |
| J1 | 5615 | CN M 3 C PRT MODU2 | |
| J2 | W1404595 | CBL INTERFACE - ALIMENTATION | |
| P1654 | W1404544 | CI COUPURE AUTOMAT. MAGSCREEN | |
| PF1 | 35012 | FUS SUP PRT TR5 | |
| PF2 | 35012 | FUS SUP PRT TR5 | |
| PF3 | 35012 | FUS SUP PRT TR5 | |
| R1 | 20750 | RES CMS 10K 1% 0.25W 1206 | |
| R2 | 51742 | RES CMS 3.32M 1% 0.25W 1206 | |
| R3 | 20750 | RES CMS 10K 1% 0.25W 1206 | |
| R4 | 20750 | RES CMS 10K 1% 0.25W 1206 | |
| R5 | 20750 | RES CMS 10K 1% 0.25W 1206 | |
| R6 | 20750 | RES CMS 10K 1% 0.25W 1206 | |
| R7 | 20750 | RES CMS 10K 1% 0.25W 1206 | |
| R8 | 20750 | RES CMS 10K 1% 0.25W 1206 | |
| R9 | 20744 | RES CMS 3.92K 1% 0.25W 1206 | |
| R10 | 20744 | RES CMS 3.92K 1% 0.25W 1206 | |
| R11 | 21330 | RES CMS 39.2K 1% 0.25W 1206 | |
| R12 | 20750 | RES CMS 10K 1% 0.25W 1206 | |
| R13 | 20726 | RES CMS 150 1% 0.25W 1206 | |
| T1 | 51779 | TRANS CMS BC850C NPN SOT23 | |
| T2 | 51777 | TRANS CMS BC860C PNP SOT23 | |
| T3 | 51365 | TRANS CMS IRFR9024 | |
| T4 | 51364 | TRANS CMS IRFR024N TR | |
| T5 | 51779 | TRANS CMS BC850C NPN SOT23 | |
| T6 | 51779 | TRANS CMS BC850C NPN SOT23 | |
| U1 | 51807 | OPTO FIBRE RECEPTEUR 2523 | |
| U2 | 22042 | IC 7400/SN74HC00D SO14 CMS | |
| U3 | 51515 | IC OPT PC817 DIP4 | |
| U5 | 3351 | CBL FIL SOUPLE 0.14MM2 VR | |

# 5. PARTS LISTS

**Page : 1/1**

**Diagram : W4S141654A - ECL0**
**Assembly : W1411804**
**Designation : AUTOMATIC CUTOFF IC**
**Reference : W4P141654A**

| REF. | PART NUMBER | DESIGNATION | NBRE |
|---|---|---|---|
| C1 | 1982 | COND CHIMI RAD 470U 25V 10X16 | |
| C10 | 72541 | COND CMS TANTAL 2.2U 35V 20% | |
| C11 | 21012 | COND CMS 1206 6.8N 50V 10% X7R | |
| C12 | 8493 | COND CMS 1206 100N 50V 20% X7R | |
| C13 | 1972 | COND CHIMI RAD 470U 10V 8X11.5 | |
| C14 | 8493 | COND CMS 1206 100N 50V 20% X7R | |
| C18 | 8493 | COND CMS 1206 100N 50V 20% X7R | |
| C19 | 51558 | COND CMS TANTAL 15U 10V 20% | |
| C2 | 8493 | COND CMS 1206 100N 50V 20% X7R | |
| C3 | 72661 | COND CMS 1206 4.7U 16V +80-20% | |
| C4 | 1982 | COND CHIMI RAD 470U 25V 10X16 | |
| C5 | 8493 | COND CMS 1206 100N 50V 20% X7R | |
| C7 | 21002 | COND CMS 1206 1N 50V 5% NPO | |
| C8 | 1981 | COND CHIMI RAD 220U 25V 8X11.5 | |
| C9 | 8493 | COND CMS 1206 100N 50V 20% X7R | |
| D1 | 22029 | DIODE CMS BAS32L SOD80 | |
| D2 | 22029 | DIODE CMS BAS32L SOD80 | |
| D3 | 22029 | DIODE CMS BAS32L SOD80 | |
| D4 | 22029 | DIODE CMS BAS32L SOD80 | |
| D5 | 22564 | DIODE S 1N5822 40V 3A | |
| F1 | 35430 | FUS TR5 8X7MM 2.5A T 250V | |
| J1 | 5616 | CN M 4 C PRT MODU2 | |
| J2 | W1404595 | CBL INTERFACE - ALIMENTATION | |
| J3 | 5615 | CN M 3 C PRT MODU2 | |
| J4 | 20812 | CN M 50 C PRT MODU2 1-R | |
| JMP | 3033 | ACCBL CAVALIER F 2.54MM | |
| L1 | 72241 | SELF 110UH 3A | |
| L2 | 33147 | SELF 50UH 2.5A | |
| L3 | 33147 | SELF 50UH 2.5A | |
| P1654A | W1404544 | CI COUPURE AUTOMAT. MAGSCREEN | |
| PF1 | 35012 | FUS SUP PRT TR5 | |
| R1 | 20742 | RES CMS 2.7K 1% 0.25W 1206 | |
| R10 | 20750 | RES CMS 10K 1% 0.25W 1206 | |
| R11 | 21352 | RES CMS 0 1% 0.25W 1206 | |
| R2 | 51734 | RES CMS 2K 1% 0.25W 1206 | |
| R3 | 20742 | RES CMS 2.7K 1% 0.25W 1206 | |
| R4 | 20750 | RES CMS 10K 1% 0.25W 1206 | |
| R5 | 20750 | RES CMS 10K 1% 0.25W 1206 | |
| R6 | 51742 | RES CMS 3.32M 1% 0.25W 1206 | |
| R7 | 20750 | RES CMS 10K 1% 0.25W 1206 | |
| R8 | 20750 | RES CMS 10K 1% 0.25W 1206 | |
| R9 | 20750 | RES CMS 10K 1% 0.25W 1206 | |
| RG1 | 22504 | IC 7805/VREG MC78L05ACD SO8 | |
| RG2 | 72929 | IC 1074/VREG TO220-5 | |
| T1 | 51779 | TRANS CMS BC850C NPN SOT23 | |
| T2 | 51365 | TRANS CMS IRFR9024 | |
| T3 | 51365 | TRANS CMS IRFR9024 | |
| U1 | 51807 | OPTO FIBRE RECEPTEUR 2523 | |
| U2 | 22042 | IC 7400/SN74HC00D SO14 CMS | |

# 5. PARTS LISTS

**Page : 1/4**

**Diagram : W3S141641A - ECL3**
**Assembly : W1411742**
**Designation : PCB PC INTERFACE**
**Reference : W4P141641A**

| REF. | PART NUMBER | DESIGNATION | NBER |
|---|---|---|---|
| C14 | 8493 | COND CMS 1206 100N 50V 20% X7R | |
| C15 | 8493 | COND CMS 1206 100N 50V 20% X7R | |
| C16 | 8493 | COND CMS 1206 100N 50V 20% X7R | |
| C19 | 51556 | COND CMS TANTAL 47U 10V 20% | |
| C2 | 8493 | COND CMS 1206 100N 50V 20% X7R | |
| C20 | 8493 | COND CMS 1206 100N 50V 20% X7R | |
| C21 | 51556 | COND CMS TANTAL 47U 10V 20% | |
| C22 | 51557 | COND CMS TANTAL 22U 20V 20% | |
| C26 | 51557 | COND CMS TANTAL 22U 20V 20% | |
| C3 | 8493 | COND CMS 1206 100N 50V 20% X7R | |
| C30 | 21014 | COND CMS 1206 10N 50V 20% X7R | |
| C31 | 8493 | COND CMS 1206 100N 50V 20% X7R | |
| C32 | 22044 | COND CMS 1812 220N 50V 20% X7R | |
| C33 | 19190 | COND CMS TANTAL 4.7U 35V 20% | |
| C34 | 8493 | COND CMS 1206 100N 50V 20% X7R | |
| C4 | 8493 | COND CMS 1206 100N 50V 20% X7R | |
| C5 | 8493 | COND CMS 1206 100N 50V 20% X7R | |
| C50 | 21004 | COND CMS 1206 1.5N 50V 5% NPO | |
| C51 | 21004 | COND CMS 1206 1.5N 50V 5% NPO | |
| C52 | 21004 | COND CMS 1206 1.5N 50V 5% NPO | |
| C53 | 21004 | COND CMS 1206 1.5N 50V 5% NPO | |
| C6 | 8493 | COND CMS 1206 100N 50V 20% X7R | |
| C60 | 21004 | COND CMS 1206 1.5N 50V 5% NPO | |
| C61 | 21004 | COND CMS 1206 1.5N 50V 5% NPO | |
| C62 | 21004 | COND CMS 1206 1.5N 50V 5% NPO | |
| C63 | 21004 | COND CMS 1206 1.5N 50V 5% NPO | |
| C7 | 8493 | COND CMS 1206 100N 50V 20% X7R | |
| C70 | 21004 | COND CMS 1206 1.5N 50V 5% NPO | |
| C71 | 21004 | COND CMS 1206 1.5N 50V 5% NPO | |
| C72 | 21004 | COND CMS 1206 1.5N 50V 5% NPO | |
| C73 | 21004 | COND CMS 1206 1.5N 50V 5% NPO | |
| C82 | 72548 | COND CMS 1206 47N 50V 5% X7R | |
| C83 | 20986 | COND CMS 1206 47P 50V 5% NPO | |
| C84 | 8493 | COND CMS 1206 100N 50V 20% X7R | |
| C85 | 21004 | COND CMS 1206 1.5N 50V 5% NPO | |
| C86 | 21004 | COND CMS 1206 1.5N 50V 5% NPO | |
| C87 | 21004 | COND CMS 1206 1.5N 50V 5% NPO | |
| C88 | 21004 | COND CMS 1206 1.5N 50V 5% NPO | |
| C89 | 72541 | COND CMS TANTAL 2.2U 35V 20% | |
| C90 | 51557 | COND CMS TANTAL 22U 20V 20% | |
| C91 | 51518 | COND CMS 1812 1U 50V 20% Y4T | |
| C92 | 1979 | COND CHIMI RAD 47U 25V 7X7 | |
| C93 | 51557 | COND CMS TANTAL 22U 20V 20% | |
| C94 | 8493 | COND CMS 1206 100N 50V 20% X7R | |
| C95 | 8493 | COND CMS 1206 100N 50V 20% X7R | |
| C96 | 1980 | COND CHIMI RAD 100U 25V 6.3X11 | |
| C97 | 51518 | COND CMS 1812 1U 50V 20% Y4T | |
| J1-J2 | 72706 | CN MF 32 D PRT 2-R | |
| J10 | 5770 | CN M 100 D PRT MODU2 2X50 | |

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**Diagram : W3S141641A - ECL3**

# 5. PARTS LISTS

**Assembly : W1411742**
**Designation : PCB PC INTERFACE**
**Reference : W4P141641A**

| REF. | PART NUMBER | DESIGNATION | NBER |
|---|---|---|---|
| J3 | 15755 | CN M 14 D PRT TRANSITION REDUI | |
| J4 | 5676 | CN M 20 D PRT 3.2 TRANSITION | |
| J5 | 12625 | CN M 10 D PRT TRANSITION | |
| J6 | 22671 | CN M 16 D PRT TRANSITION REDUI | |
| J7 | 5615 | CN M 3 C PRT MODU2 | |
| J8 | 72229 | CN M 5 D PRT MODU2 | |
| J9 | 72156 | CN M 6 D PRT MODU2 | |
| P05 | 51459 | RES AJUST 10K 0.25W 1T CMS | |
| P1641A | W1404430 | CI INTERFACE PC/ALARMES MAGC | |
| R02 | 21335 | RES CMS 100K 1% 0.25W 1206 | |
| R1 | 21327 | RES CMS 22.1K 1% 0.25W 1206 | |
| R10 | 20737 | RES CMS 1K 1% 0.25W 1206 | |
| R11 | 20739 | RES CMS 1.5K 1% 0.25W 1206 | |
| R12 | 51516 | RES CMS 750 1% 0.25W 1206 | |
| R13 | 21327 | RES CMS 22.1K 1% 0.25W 1206 | |
| R14 | 21327 | RES CMS 22.1K 1% 0.25W 1206 | |
| R15 | 21327 | RES CMS 22.1K 1% 0.25W 1206 | |
| R16 | 59887 | RES CMS 5.1K 1% 0.25W 1206 | |
| R17 | 59887 | RES CMS 5.1K 1% 0.25W 1206 | |
| R18 | 59887 | RES CMS 5.1K 1% 0.25W 1206 | |
| R19 | 59887 | RES CMS 5.1K 1% 0.25W 1206 | |
| R2 | 20741 | RES CMS 2.21K 1% 0.25W 1206 | |
| R20 | 59887 | RES CMS 5.1K 1% 0.25W 1206 | |
| R21 | 59887 | RES CMS 5.1K 1% 0.25W 1206 | |
| R22 | 59887 | RES CMS 5.1K 1% 0.25W 1206 | |
| R23 | 59887 | RES CMS 5.1K 1% 0.25W 1206 | |
| R24 | 51516 | RES CMS 750 1% 0.25W 1206 | |
| R25 | 59887 | RES CMS 5.1K 1% 0.25W 1206 | |
| R3 | 21327 | RES CMS 22.1K 1% 0.25W 1206 | |
| R30 | 21347 | RES CMS 1M 1% 0.25W 1206 | |
| R31 | 21327 | RES CMS 22.1K 1% 0.25W 1206 | |
| R32 | 21327 | RES CMS 22.1K 1% 0.25W 1206 | |
| R33 | 21327 | RES CMS 22.1K 1% 0.25W 1206 | |
| R34 | 21347 | RES CMS 1M 1% 0.25W 1206 | |
| R35 | 21347 | RES CMS 1M 1% 0.25W 1206 | |
| R36 | 20750 | RES CMS 10K 1% 0.25W 1206 | |
| R37 | 21335 | RES CMS 100K 1% 0.25W 1206 | |
| R38 | 21327 | RES CMS 22.1K 1% 0.25W 1206 | |
| R39 | 21335 | RES CMS 100K 1% 0.25W 1206 | |
| R4 | 21327 | RES CMS 22.1K 1% 0.25W 1206 | |
| R40 | 20750 | RES CMS 10K 1% 0.25W 1206 | |
| R42 | 21347 | RES CMS 1M 1% 0.25W 1206 | |
| R43 | 21327 | RES CMS 22.1K 1% 0.25W 1206 | |
| R44 | 21327 | RES CMS 22.1K 1% 0.25W 1206 | |
| R45 | 21327 | RES CMS 22.1K 1% 0.25W 1206 | |
| R46 | 21327 | RES CMS 22.1K 1% 0.25W 1206 | |

# 5. PARTS LISTS

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**Diagram : W3S141641A - ECL3**
**Assembly : W1411742**
**Designation : PCB PC INTERFACE**
**Reference : W4P141641A**

| REF. | PART NUMBER | DESIGNATION | NBER |
|---|---|---|---|
| R5 | 59887 | RES CMS 5.1K 1% 0.25W 1206 | |
| R50 | 51755 | RES CMS 56.2K 1% 0.25W 1206 | |
| R51 | 51755 | RES CMS 56.2K 1% 0.25W 1206 | |
| R52 | 51755 | RES CMS 56.2K 1% 0.25W 1206 | |
| R53 | 53702 | RES CMS 30.1K 1% 0.25W 1206 | |
| R54 | 20750 | RES CMS 10K 1% 0.25W 1206 | |
| R55 | 8855 | RES CMS 3.01K 1% 0.25W 1206 | |
| R6 | 21335 | RES CMS 100K 1% 0.25W 1206 | |
| R60 | 53702 | RES CMS 30.1K 1% 0.25W 1206 | |
| R61 | 53702 | RES CMS 30.1K 1% 0.25W 1206 | |
| R62 | 53702 | RES CMS 30.1K 1% 0.25W 1206 | |
| R63 | 53702 | RES CMS 30.1K 1% 0.25W 1206 | |
| R64 | 20750 | RES CMS 10K 1% 0.25W 1206 | |
| R65 | 8855 | RES CMS 3.01K 1% 0.25W 1206 | |
| R7 | 20737 | RES CMS 1K 1% 0.25W 1206 | |
| R70 | 21334 | RES CMS 82.5K 1% 0.25W 1206 | |
| R71 | 21334 | RES CMS 82.5K 1% 0.25W 1206 | |
| R72 | 21334 | RES CMS 82.5K 1% 0.25W 1206 | |
| R73 | 53702 | RES CMS 30.1K 1% 0.25W 1206 | |
| R74 | 20750 | RES CMS 10K 1% 0.25W 1206 | |
| R75 | 8855 | RES CMS 3.01K 1% 0.25W 1206 | |
| R77 | 20750 | RES CMS 10K 1% 0.25W 1206 | |
| R78 | 8855 | RES CMS 3.01K 1% 0.25W 1206 | |
| R79 | 53702 | RES CMS 30.1K 1% 0.25W 1206 | |
| R8 | 20737 | RES CMS 1K 1% 0.25W 1206 | |
| R82 | 20750 | RES CMS 10K 1% 0.25W 1206 | |
| R83 | 33932 | RES CMS 16.2K 1% 0.25W 1206 | |
| R84 | 21335 | RES CMS 100K 1% 0.25W 1206 | |
| R85 | 53702 | RES CMS 30.1K 1% 0.25W 1206 | |
| R86 | 33927 | RES CMS 20K 1% 0.25W 1206 | |
| R87 | 53702 | RES CMS 30.1K 1% 0.25W 1206 | |
| R88 | 53702 | RES CMS 30.1K 1% 0.25W 1206 | |
| R89 | 53692 | RES CMS 301K 1% 0.25W 1206 | |
| R9 | 20737 | RES CMS 1K 1% 0.25W 1206 | |
| R90 | 20737 | RES CMS 1K 1% 0.25W 1206 | |
| R91 | 33927 | RES CMS 20K 1% 0.25W 1206 | |
| R92 | 22355 | RES CMS 4.7 5% 0.25W 1206 | |
| R93 | 20750 | RES CMS 10K 1% 0.25W 1206 | |
| R94 | 53692 | RES CMS 301K 1% 0.25W 1206 | |
| RN1 | 577 | RES RES 22KX8 2% SIL9 | |
| RN2 | 577 | RES RES 22KX8 2% SIL9 | |
| S16 | 4285 | IC SUPPORT DIL8 TULIPE | |
| T10 | 51779 | TRANS CMS BC850C NPN SOT23 | |
| T2 | 51779 | TRANS CMS BC850C NPN SOT23 | |
| T9 | 51365 | TRANS CMS IRFR9024 | |

# 5. PARTS LISTS

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**Diagram : W3S141641A - ECL3**
**Assembly : W1411742**
**Designation : PCB PC INTERFACE**
**Reference : W4P141641A**

| REF. | PART NUMBER | DESIGNATION | NBER |
|---|---|---|---|
| TP1 | 22276 | ACCBL PICOT TEST D=1.3MM | |
| TP2 | 22276 | ACCBL PICOT TEST D=1.3MM | |
| TP3 | 22276 | ACCBL PICOT TEST D=1.3MM | |
| TP4 | 22276 | ACCBL PICOT TEST D=1.3MM | |
| TP5 | 22276 | ACCBL PICOT TEST D=1.3MM | |
| TP6 | 22276 | ACCBL PICOT TEST D=1.3MM | |
| U1 | 72725 | IC 3142/PLD XC3142A PQFP 100 | |
| U11 | 72663 | OPTO PHOTODIODE SFH756V | |
| U12 | 51807 | OPTO FIBRE RECEPTEUR 2523 | |
| U13 | 51807 | OPTO FIBRE RECEPTEUR 2523 | |
| U14 | 51806 | OPTO FIBRE EMETTEUR 1523 | |
| U15 | 22320 | IC 7414/SN74HC14D SO14 CMS | |
| U16 | 51480 | IC 1736/PLD XC1736-PD8C PDIP8 | |
| U17 | 51782 | IC 7432/SN74HC32D SO14 CMS | |
| U2 | 51898 | IC 82684/DSP XR-82C684CJ CMS | |
| U20 | 51794 | IC 4066/SWI CD4066BM SO14 | |
| U21 | 72647 | IC 27/OP TLC27L2CD SO8 | |
| U22 | 72647 | IC 27/OP TLC27L2CD SO8 | |
| U23 | 51675 | IC 062/OP TL062CD SO8 CMS | |
| U24 | 51794 | IC 4066/SWI CD4066BM SO14 | |
| U25 | 72544 | IC 1904/OP TDA1904 PDIP16 | |
| U26 | 72727 | IC 4046/CD HEF4046BT SO16 | |
| U3 | 51898 | IC 82684/DSP XR-82C684CJ CMS | |
| U30 | 51791 | IC 4093/CD HEF4093BT SO14 CMS | |
| U31 | 51494 | IC 4040/CD HEF4040BT SO16 CMS | |
| U32 | 51676 | IC 4538/CD HEF4538BT SO16 CMS | |
| U33 | 51797 | IC 4012/CD HEF4012BT SO14 CMS | |
| U34 | 51791 | IC 4093/CD HEF4093BT SO14 CMS | |
| U5 | 22323 | IC 74245/SN74HC245DW SOL20 CMS | |
| U6 | 22283 | IC 74541/SN74HC541DW SOL20 CMS | |
| U7 | 22283 | IC 74541/SN74HC541DW SOL20 CMS | |

# 5. PARTS LISTS

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**Diagram : W4S141596B - ECL0**
**Assembly : W7412096**
**Designation : PCB PC INTERFACE**
**Reference : W4P141730A**

| REF. | PART NUMBER | DESIGNATION | NBER |
|---|---|---|---|
| BAT1 | 72620 | PILE LITH 3.6V 1/2AA | |
| C01 | 21004 | COND CMS 1206 1.5N 50V 5% NPO | |
| C02 | 8493 | COND CMS 1206 100N 50V 20% X7R | |
| C03 | 8493 | COND CMS 1206 100N 50V 20% X7R | |
| C04 | 8493 | COND CMS 1206 100N 50V 20% X7R | |
| C05 | 8493 | COND CMS 1206 100N 50V 20% X7R | |
| C06 | 8493 | COND CMS 1206 100N 50V 20% X7R | |
| C07 | 8493 | COND CMS 1206 100N 50V 20% X7R | |
| C08 | 8493 | COND CMS 1206 100N 50V 20% X7R | |
| C09 | 51556 | COND CMS TANTAL 47U 16V 20% | |
| C10 | 21004 | COND CMS 1206 1.5N 50V 5% NPO | |
| C14 | 8493 | COND CMS 1206 100N 50V 20% X7R | |
| C15 | 8493 | COND CMS 1206 100N 50V 20% X7R | |
| C16 | 8493 | COND CMS 1206 100N 50V 20% X7R | |
| C19 | 51556 | COND CMS TANTAL 47U 16V 20% | |
| C20 | 8493 | COND CMS 1206 100N 50V 20% X7R | |
| C21 | 51556 | COND CMS TANTAL 47U 16V 20% | |
| C22 | 51557 | COND CMS TANTAL 22U 20V 10% | |
| C26 | 51557 | COND CMS TANTAL 22U 20V 10% | |
| C30 | 72548 | COND CMS 1206 47N 50V 5% X7R | |
| C31 | 8493 | COND CMS 1206 100N 50V 20% X7R | |
| C32 | 8493 | COND CMS 1206 100N 50V 20% X7R | |
| C33 | 72661 | COND CMS 1206 4.7U 16V +80-20% | |
| C34 | 8493 | COND CMS 1206 100N 50V 20% X7R | |
| C50 | 21004 | COND CMS 1206 1.5N 50V 5% NPO | |
| C51 | 21004 | COND CMS 1206 1.5N 50V 5% NPO | |
| C52 | 21004 | COND CMS 1206 1.5N 50V 5% NPO | |
| C53 | 21004 | COND CMS 1206 1.5N 50V 5% NPO | |
| C55 | 8493 | COND CMS 1206 100N 50V 20% X7R | |
| C56 | 8493 | COND CMS 1206 100N 50V 20% X7R | |
| C57 | 8493 | COND CMS 1206 100N 50V 20% X7R | |
| C58 | 8493 | COND CMS 1206 100N 50V 20% X7R | |
| C59 | 8493 | COND CMS 1206 100N 50V 20% X7R | |
| C60 | 21004 | COND CMS 1206 1.5N 50V 5% NPO | |
| C61 | 21004 | COND CMS 1206 1.5N 50V 5% NPO | |
| C62 | 21004 | COND CMS 1206 1.5N 50V 5% NPO | |
| C63 | 21004 | COND CMS 1206 1.5N 50V 5% NPO | |
| C65 | 8493 | COND CMS 1206 100N 50V 20% X7R | |
| C66 | 8493 | COND CMS 1206 100N 50V 20% X7R | |
| C68 | 8493 | COND CMS 1206 100N 50V 20% X7R | |
| C70 | 21004 | COND CMS 1206 1.5N 50V 5% NPO | |
| C71 | 21004 | COND CMS 1206 1.5N 50V 5% NPO | |
| C72 | 21004 | COND CMS 1206 1.5N 50V 5% NPO | |
| C73 | 21004 | COND CMS 1206 1.5N 50V 5% NPO | |
| C75 | 51557 | COND CMS TANTAL 22U 20V 10% | |
| C76 | 51557 | COND CMS TANTAL 22U 20V 10% | |
| C77 | 51557 | COND CMS TANTAL 22U 20V 10% | |
| C78 | 51557 | COND CMS TANTAL 22U 20V 10% | |
| C82 | 72548 | COND CMS 1206 47N 50V 5% X7R | |
| C83 | 20986 | COND CMS 1206 47P 50V 5% NPO | |
| C84 | 8493 | COND CMS 1206 100N 50V 20% X7R | |
| C85 | 21004 | COND CMS 1206 1.5N 50V 5% NPO | |
| C86 | 21004 | COND CMS 1206 1.5N 50V 5% NPO | |
| C87 | 21004 | COND CMS 1206 1.5N 50V 5% NPO | |
| C88 | 21004 | COND CMS 1206 1.5N 50V 5% NPO | |
| C89 | 72541 | COND CMS TANTAL 2.2U 35V 20% | |
| C90 | 51557 | COND CMS TANTAL 22U 20V 10% | |
| C91 | 72660 | COND CMS 1206 1U 16V +80/-20% | |
| C92 | 51556 | COND CMS TANTAL 47U 16V 20% | |
| C93 | 51557 | COND CMS TANTAL 22U 20V 10% | |

# 5. PARTS LISTS

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**Diagram : W4S141596B - ECL0**
**Assembly : W7412096**
**Designation : PCB PC INTERFACE**
**Reference : W4P141730A**

| REF. | PART NUMBER | DESIGNATION | NBER |
|---|---|---|---|
| C94 | 8493 | COND CMS 1206 100N 50V 20% X7R | |
| C95 | 8493 | COND CMS 1206 100N 50V 20% X7R | |
| C98 | 72660 | COND CMS 1206 1U 16V +80/-20% | |
| D1 | 22029 | DIODE CMS BAS32L SOD80 | |
| D2 | 22029 | DIODE CMS BAS32L SOD80 | |
| J1-J2 | 72706 | CN MF 32 D PRT 2-R | |
| J10 | 5770 | CN M 100 D PRT MODU2 2X50 | |
| J11 | 5778 | CN M 50 D PRT MODU2 | |
| J12 | 5778 | CN M 50 D PRT MODU2 | |
| J13 | 34875 | CN M 4 C PRT 7395 | |
| J14 | 5770 | CN M 100 D PRT MODU2 2X50 | |
| J3 | 15755 | CN M 14 D PRT TRANSITION REDUI | |
| J4 | 5676 | CN M 20 D PRT 3.2 TRANSITION | |
| J5 | 12625 | CN M 10 D PRT TRANSITION | |
| J6 | 22671 | CN M 16 D PRT TRANSITION REDUI | |
| J7 | 5615 | CN M 3 C PRT MODU2 | |
| J8 | 3861 | CN M 5 C PRT MODU2 | |
| J9 | 3861 | CN M 5 C PRT MODU2 | |
| P05 | 51457 | RES AJUST 1K 0.25W 1T CMS | |
| P1730 | W1405417 | CI INTERFACE MAGLIFE C | |
| R01 | 21327 | RES CMS 22.1K 1% 0.25W 1206 | |
| R02 | 21335 | RES CMS 100K 1% 0.25W 1206 | |
| R03 | 21327 | RES CMS 22.1K 1% 0.25W 1206 | |
| R04 | 21327 | RES CMS 22.1K 1% 0.25W 1206 | |
| R05 | 8855 | RES CMS 3.01K 1% 0.25W 1206 | |
| R06 | 21335 | RES CMS 100K 1% 0.25W 1206 | |
| R07 | 20739 | RES CMS 1.5K 1% 0.25W 1206 | |
| R08 | 20739 | RES CMS 1.5K 1% 0.25W 1206 | |
| R09 | 20739 | RES CMS 1.5K 1% 0.25W 1206 | |
| R10 | 20739 | RES CMS 1.5K 1% 0.25W 1206 | |
| R11 | 21327 | RES CMS 22.1K 1% 0.25W 1206 | |
| R12 | 8855 | RES CMS 3.01K 1% 0.25W 1206 | |
| R13 | 8855 | RES CMS 3.01K 1% 0.25W 1206 | |
| R14 | 21327 | RES CMS 22.1K 1% 0.25W 1206 | |
| R15 | 21327 | RES CMS 22.1K 1% 0.25W 1206 | |
| R16 | 21335 | RES CMS 100K 1% 0.25W 1206 | |
| R17 | 21335 | RES CMS 100K 1% 0.25W 1206 | |
| R18 | 21335 | RES CMS 100K 1% 0.25W 1206 | |
| R19 | 21335 | RES CMS 100K 1% 0.25W 1206 | |
| R20 | 8855 | RES CMS 3.01K 1% 0.25W 1206 | |
| R21 | 8855 | RES CMS 3.01K 1% 0.25W 1206 | |
| R22 | 8855 | RES CMS 3.01K 1% 0.25W 1206 | |
| R23 | 8855 | RES CMS 3.01K 1% 0.25W 1206 | |
| R24 | 21335 | RES CMS 100K 1% 0.25W 1206 | |
| R25 | 8855 | RES CMS 3.01K 1% 0.25W 1206 | |
| R26 | 20750 | RES CMS 10K 1% 0.25W 1206 | |
| R27 | 21327 | RES CMS 22.1K 1% 0.25W 1206 | |
| R28 | 21327 | RES CMS 22.1K 1% 0.25W 1206 | |
| R29 | 21327 | RES CMS 22.1K 1% 0.25W 1206 | |
| R30 | 21347 | RES CMS 1M 1% 0.25W 1206 | |
| R31 | 21335 | RES CMS 100K 1% 0.25W 1206 | |
| R32 | 21327 | RES CMS 22.1K 1% 0.25W 1206 | |
| R33 | 21335 | RES CMS 100K 1% 0.25W 1206 | |
| R34 | 72213 | RES CMS 2.4M 1% 0.25W 1206 | |
| R35 | 21347 | RES CMS 1M 1% 0.25W 1206 | |
| R36 | 21335 | RES CMS 100K 1% 0.25W 1206 | |
| R37 | 21335 | RES CMS 100K 1% 0.25W 1206 | |
| R38 | 21335 | RES CMS 100K 1% 0.25W 1206 | |
| R39 | 21335 | RES CMS 100K 1% 0.25W 1206 | |
| R40 | 21327 | RES CMS 22.1K 1% 0.25W 1206 | |

# 5. PARTS LISTS

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**Diagram : W4S141596B - ECL0**
**Assembly : W7412096**
**Designation : PCB PC INTERFACE**
**Reference : W4P141730A**

| REF. | PART NUMBER | DESIGNATION | NBER |
|---|---|---|---|
| R41 | 21335 | RES CMS 100K 1% 0.25W 1206 | |
| R42 | 21347 | RES CMS 1M 1% 0.25W 1206 | |
| R43 | 21335 | RES CMS 100K 1% 0.25W 1206 | |
| R44 | 21335 | RES CMS 100K 1% 0.25W 1206 | |
| R45 | 21335 | RES CMS 100K 1% 0.25W 1206 | |
| R46 | 21335 | RES CMS 100K 1% 0.25W 1206 | |
| R47 | 21327 | RES CMS 22.1K 1% 0.25W 1206 | |
| R48 | 21327 | RES CMS 22.1K 1% 0.25W 1206 | |
| R49 | 21327 | RES CMS 22.1K 1% 0.25W 1206 | |
| R50 | 51750 | RES CMS 49.9K 1% 0.25W 1206 | |
| R51 | 51750 | RES CMS 49.9K 1% 0.25W 1206 | |
| R52 | 51750 | RES CMS 49.9K 1% 0.25W 1206 | |
| R53 | 53702 | RES CMS 30.1K 1% 0.25W 1206 | |
| R54 | 20750 | RES CMS 10K 1% 0.25W 1206 | |
| R55 | 8855 | RES CMS 3.01K 1% 0.25W 1206 | |
| R56 | 21327 | RES CMS 22.1K 1% 0.25W 1206 | |
| R57 | 51750 | RES CMS 49.9K 1% 0.25W 1206 | |
| R58 | 72213 | RES CMS 2.4M 1% 0.25W 1206 | |
| R59 | 21347 | RES CMS 1M 1% 0.25W 1206 | |
| R60 | 53702 | RES CMS 30.1K 1% 0.25W 1206 | |
| R61 | 53702 | RES CMS 30.1K 1% 0.25W 1206 | |
| R62 | 53702 | RES CMS 30.1K 1% 0.25W 1206 | |
| R63 | 53702 | RES CMS 30.1K 1% 0.25W 1206 | |
| R64 | 20750 | RES CMS 10K 1% 0.25W 1206 | |
| R65 | 8855 | RES CMS 3.01K 1% 0.25W 1206 | |
| R66 | 53690 | RES CMS 332K 1% 0.25W 1206 | |
| R67 | 21335 | RES CMS 100K 1% 0.25W 1206 | |
| R68 | 20737 | RES CMS 1K 1% 0.25W 1206 | |
| R69 | 21327 | RES CMS 22.1K 1% 0.25W 1206 | |
| R70 | 21334 | RES CMS 82.5K 1% 0.25W 1206 | |
| R71 | 21334 | RES CMS 82.5K 1% 0.25W 1206 | |
| R72 | 21334 | RES CMS 82.5K 1% 0.25W 1206 | |
| R73 | 53702 | RES CMS 30.1K 1% 0.25W 1206 | |
| R74 | 20750 | RES CMS 10K 1% 0.25W 1206 | |
| R75 | 8855 | RES CMS 3.01K 1% 0.25W 1206 | |
| R77 | 20750 | RES CMS 10K 1% 0.25W 1206 | |
| R78 | 8855 | RES CMS 3.01K 1% 0.25W 1206 | |
| R79 | 53702 | RES CMS 30.1K 1% 0.25W 1206 | |
| R80 | 21327 | RES CMS 22.1K 1% 0.25W 1206 | |
| R81 | 21327 | RES CMS 22.1K 1% 0.25W 1206 | |
| R82 | 20750 | RES CMS 10K 1% 0.25W 1206 | |
| R83 | 33932 | RES CMS 16.2K 1% 0.25W 1206 | |
| R84 | 21335 | RES CMS 100K 1% 0.25W 1206 | |
| R85 | 21335 | RES CMS 100K 1% 0.25W 1206 | |
| R86 | 21327 | RES CMS 22.1K 1% 0.25W 1206 | |
| R87 | 21335 | RES CMS 100K 1% 0.25W 1206 | |
| R88 | 21335 | RES CMS 100K 1% 0.25W 1206 | |
| R89 | 53690 | RES CMS 332K 1% 0.25W 1206 | |
| R90 | 20724 | RES CMS 100 1% 0.25W 1206 | |
| R91 | 8855 | RES CMS 3.01K 1% 0.25W 1206 | |
| R92 | 22355 | RES CMS 4.7 5% 0.25W 1206 | |
| R93 | 51750 | RES CMS 49.9K 1% 0.25W 1206 | |
| R94 | 53690 | RES CMS 332K 1% 0.25W 1206 | |
| R95 | 21327 | RES CMS 22.1K 1% 0.25W 1206 | |
| R96 | 21327 | RES CMS 22.1K 1% 0.25W 1206 | |
| R97 | 21327 | RES CMS 22.1K 1% 0.25W 1206 | |
| R98 | 21327 | RES CMS 22.1K 1% 0.25W 1206 | |
| R99 | 8855 | RES CMS 3.01K 1% 0.25W 1206 | |
| SU16 | 4285 | IC SUPPORT DIL8 TULIPE | |

# 5. PARTS LISTS

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**Diagram : W4S141596B - ECL0**
**Assembly : W7412096**
**Designation : PCB PC INTERFACE**
**Reference : W4P141730A**

| REF. | PART NUMBER | DESIGNATION | NBER |
|---|---|---|---|
| TP1 | 42990 | ACCBL PICOT TEST CMS D=1.0MM | |
| TP2 | 42990 | ACCBL PICOT TEST CMS D=1.0MM | |
| TP3 | 42990 | ACCBL PICOT TEST CMS D=1.0MM | |
| TP4 | 42990 | ACCBL PICOT TEST CMS D=1.0MM | |
| TP5 | 42990 | ACCBL PICOT TEST CMS D=1.0MM | |
| T1 | 51779 | TRANS CMS BC850C NPN SOT23 | |
| T2 | 51779 | TRANS CMS BC850C NPN SOT23 | |
| T3 | 51777 | TRANS CMS BC860C PNP SOT23 | |
| T4 | 51365 | TRANS CMS IRFR9024 ROULEAU | |
| T5 | 51779 | TRANS CMS BC850C NPN SOT23 | |
| U01 | 72725 | IC 3142/PLD XC3142A PQFP 100 | |
| U02 | 51898 | IC 82684/DSP XR82C684CJ PLCC68 | |
| U03 | 51898 | IC 82684/DSP XR82C684CJ PLCC68 | |
| U04 | 72193 | IC 74688/74HC688 SO20 CMS | |
| U05 | 22323 | IC 74245/SN74HC245DW SOL20 CMS | |
| U06 | 22283 | IC 74541/SN74HC541DW SOL20 CMS | |
| U07 | 22283 | IC 74541/SN74HC541DW SOL20 CMS | |
| U08 | 51902 | IC 74574/SN74HC574DW SOL20CMS | |
| U09 | 22323 | IC 74245/SN74HC245DW SOL20 CMS | |
| U10 | 51375 | IC 628128/SRAM AKM628128LP-70 | |
| U11 | 72663 | OPTO PHOTODIODE SFH756V | |
| U12 | 51807 | OPTO FIBRE RECEPTEUR 2523 | |
| U13 | 51807 | OPTO FIBRE RECEPTEUR 2523 | |
| U14 | 72663 | OPTO PHOTODIODE SFH756V | |
| U15 | 22320 | IC 7414/SN74HC14D SO14 CMS | |
| U16 | W1403469 | PG ODAM MAGLIFE XILINX | |
| U17 | 51782 | IC 7432/SN74HC32D SO14 CMS | |
| U18 | 72669 | IC 932/COMP MAX932CSA SO8 | |
| U19 | 22042 | IC 7400/SN74HC00D SO14 CMS | |
| U20 | 51794 | IC 4066/SWI CD4066BM SO14 | |
| U21 | 72647 | IC 27/OP TLC27L2CD SO8 | |
| U22 | 72647 | IC 27/OP TLC27L2CD SO8 | |
| U23 | 72647 | IC 27/OP TLC27L2CD SO8 | |
| U24 | 51794 | IC 4066/SWI CD4066BM SO14 | |
| U25 | 72544 | IC 1904/OP TDA1904 PDIP16 | |
| U26 | 72727 | IC 4046/CD HEF4046BT SO16 | |
| U30 | 51791 | IC 4093/CD HEF4093BT SO14 CMS | |
| U31 | 51494 | IC 4040/CD HEF4040BT SO16 CMS | |
| U32 | 51676 | IC 4538/CD HEF4538BT SO16 CMS | |
| U33 | 51797 | IC 4012/CD HEF4012BT SO14 CMS | |
| U34 | 51791 | IC 4093/CD HEF4093BT SO14 CMS | |
| U35 | 22658 | IC 232/DRV SP232CT SOL16 | |

# 5. PARTS LISTS

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**Diagram : W4S141661 - ECL0**
**Assembly : W1411756**
**Designation : PCB LEFT KEYBOARD**
**Reference : W4P141661**

| REF. | CODE ARTICLE | DESIGNATION | NBRE |
|---|---|---|---|
| J5 | 3861 | CN M 5 C PRT MODU2 | |
| P1661 | W1404585 | CI CLAVIER GAUCHE ENTR35 MAGC | |
| PB3 | 35221 | SW POUS 1XT | |
| PB4 | 35221 | SW POUS 1XT | |
| PB5 | 35221 | SW POUS 1XT | |
| PB6 | 35221 | SW POUS 1XT | |

# 5. PARTS LISTS

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**Diagram : W4S141665 - ECL0**
**Assembly : W1411760**
**Designation : PCB RIGHT KEYBOARD**
**Reference : W4P141637**

| REF. | CODE ARTICLE | DESIGNATION | NBRE |
|---|---|---|---|
| DZ1 | 34640 | DIODE Z BZX55C 5.1V 500MW | |
| J1 | 3861 | CN M 5 C PRT MODU2 | |
| J2 | 15204 | CN M 16 C PRT TRANSI. VER. COURT | |
| J3 | 72225 | CN M 6 C PRT MODU2 | |
| J4 | 5616 | CN M 4 C PRT MODU2 | |
| LD2 | 34625 | OPTO LED 3MM JA/JA | |
| P1637 | W1404426 | CI CLAVIER DROIT ENTR35 MAGC | |
| PB2 | 35221 | SW POUS 1XT | |
| R4 | 1034 | RES MET 100K 1% 0.6W 50PPM | |
| R5 | 1026 | RES MET 22.1K 1% 0.6W 50PPM | |
| R8 | 1026 | RES MET 22.1K 1% 0.6W 50PPM | |
| R9 | 20730 | RES CMS 332 1% 0.25W 1206 | |
| T1 | 72600 | TRANS SMP40P06 PMOS TO220 | |

# 6. CALIBRATIONS

## 6.1. Adjustement of « PC interface » printed circuit

| Adjustment | Measuring instrument | Point of measurement | Potentiometer | Target value and tolerances | Remarks |
|---|---|---|---|---|---|
| Audio signal amplitude | | | P5 = MAX | | |
| Clock | Oscilloscope | TP6 | | | 109.24 ±0.1% Hz |

## 6.2. Visual test

1. The front panel should be cleaned carefully in order to prevent scratches. Dust, dirt particles, finger-prints and stains may be removed by using a soft cloth. Do not wipe a dry screen. Do not use alcohol or chlorinated hydrocarbon solvents. Inspect the front panel for scratches and other physical damage, replace if required.
2. Check all panel hardware for looseness and panel clearance.
3. Check line cord for wear, damage and proper strain relief.
4. Check all graphics and labelling for wear and scratches.

## 6.3. LED test on front panel

**ON/OFF indicator (green LED (1))**

- This LED lights on when the unit is applied.

# 7. PREVENTIVE MAINTENANCE

## 7.1. Preventive maintenance kit

## 7.2. Cleaning the MAGSCREEN

Clean the unit with common cleaning and disinfecting agents (BURATON, INCIDIN. GG. KORSOLIN or LYSO FORMIN 2000).

Apply the solution on a cloth, and not directly on the device. Do not use abrasive cleaning agents or organic solvents.

**Important:** **Make sure the unit is off and disconnected from the mains before cleaning.**
**Do not remove the covers.**
**If any liquid enters the device, have the device cleaned and verified thoroughly.**

To avoid scratching the display screen on the front of the device, clean it by blowing away dust particles or by wiping it with a sponge moistened with a cleaning agent. Do not use abrasive cleaning materials. Fingerprints and stains may be removed with lens cleaning solution and a soft cloth. Do not rub the screen with a dry cloth or use hydrochloric solvents or alcohol.

The unit shall not be exposed to temperatures above 50 °C.

Do not autoclave.

Device and accessories must be decontaminated (risk of pathological genes) before being scrapped.

## 7.3. Visual/mechanical/physical inspection

Perform such inspections regularly, once every 6 months.

Check unit for any obvious signs of physical damage, and replace as required.

Before each use, check all unit functions, simulate an alarm and check if all cable connectors and insulators are in a good condition.

Once a year check the leakage current as per paragraph 19 of standard CEI 601-1.